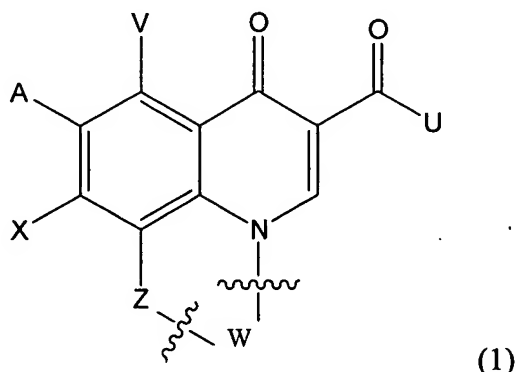


AMENDMENTS TO THE CLAIMS

1. (currently amended): A compound having formula 1, or pharmaceutically acceptable salts thereof



and pharmaceutically acceptable salts, esters and prodrugs thereof;

wherein V is H, halo, NR^1R^2 or $\text{NR}^1 - (\text{CR}^1_2)_n - \text{NR}^3\text{R}^4$;

A is H, fluoro, or NR^1_2 ;

Z is O;

U is ~~[[is]]~~ selected from the group consisting of $\text{NR}^1 - (\text{CR}^1_2)_n - \text{NR}^3\text{R}^4$ or NR^1R ~~wherein R¹ and R in NR¹R may form an optionally substituted 5-14 membered ring containing N, O or S;~~

X is OR^2 , NR^1R^2 , halo, azido, or SR^2 ;

n is 1-6;

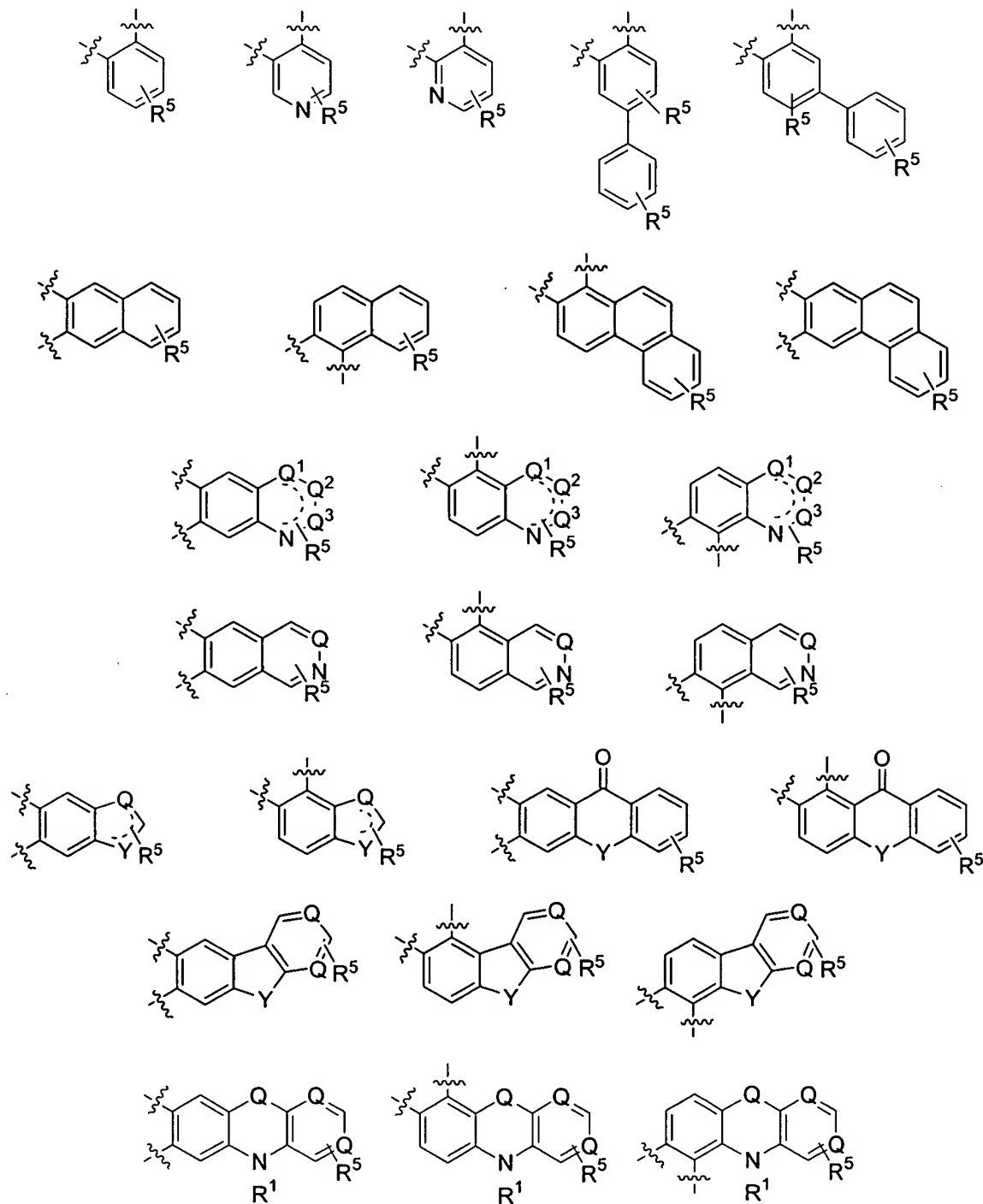
wherein R^1 and R^2 together with N in NR^1R^2 and R^3 and R^4 together with N in NR^3R^4 may independently form an optionally substituted 5-6 membered ring containing N, and optionally O or S;

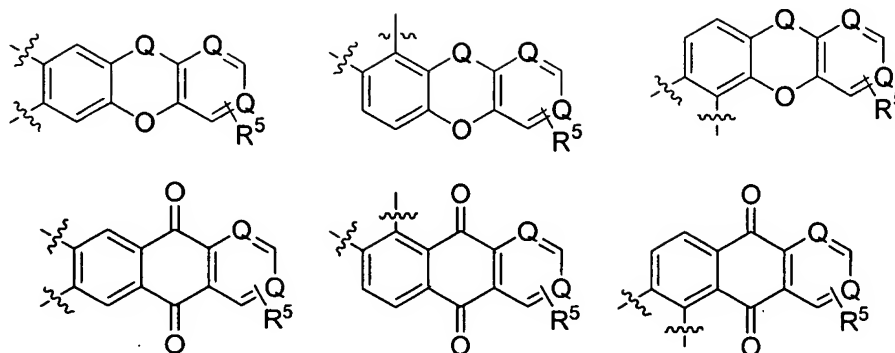
R is an optionally substituted 5-14 membered heterocyclic ring containing one or more N, O or S; or a C_{1-10} alkyl or C_{2-10} alkenyl optionally containing one or more non-adjacent heteroatoms selected from N, O, and S, and optionally substituted with a carbocyclic or heterocyclic ring;

R^1 and R^3 are independently H or a C_{1-6} alkyl;

R^2 and R^4 are independently H or a C_{1-10} alkyl or C_{2-10} alkenyl optionally containing one or more non-adjacent heteroatoms selected from N, O, and S, and optionally substituted with a carbocyclic or heterocyclic ring; or

W is selected from the group consisting of





wherein Q, Q¹, Q², and Q³ are independently CH or N;

Y is independently O, CH, C=O or NR¹;

and R⁵ is a substituent at any position on the fused ring; and is H, OR², C₁₋₆ alkyl, C₂₋₆ alkenyl, each optionally substituted by halo, or $[[C=O]] = O$; or two adjacent R⁵ is linked to obtain a 5-6 membered substituted or unsubstituted carbocyclic or heterocyclic ring, optionally fused to an additional substituted or unsubstituted carbocyclic or heterocyclic ring;

wherein each optionally substituted moiety is substituted with one or more halo, OR², NR¹R², carbamate, C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, each optionally substituted by halo, $[[C=O]] = O$, aryl or one or more heteroatoms selected from N, O and S; or is substituted with an aryl, a carbocyclic or a heterocyclic ring.

2. (original): The compound of claim 1, wherein A and X are independently halo.

3. (original): The compound of claim 2, wherein said halo is fluoro.

4. (original): The compound of claim 1, where V is H.

5. (previously presented): The compound of claim 1, wherein X is NR¹R².

6. (previously presented): The compound of claim 5, wherein R¹ is H and R² is a C₁₋₁₀ alkyl optionally containing N, O or S, and optionally substituted with a C₃₋₆ cycloalkyl, aryl or a 5-14 membered heterocyclic ring containing one or more N, O or S.

7. (original): The compound of claim 6, wherein said 5-14 membered heterocyclic ring is selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-*b*]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H- β -carboline.

8. (original): The compound of claim 5, wherein R^1 is H and R^2 is an aryl or a 5-14 membered heterocyclic ring containing one or more N, O or S, each optionally substituted with an amino or another heterocyclic ring.

9. (original): The compound of claim 8, wherein said 5-14 membered heterocyclic ring is selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-*b*]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H- β -carboline.

10. (previously presented): The compound of claim 5, wherein R^1 and R^2 together with N in NR^1R^2 form an optionally substituted 5-6 membered ring containing one or more N, O or S.

11. (previously presented): The compound of claim 10, where NR^1R^2 is pyrrolidine, imidazole, pyridine, morpholine, thiomorpholine, piperazine, piperidine or diazepine.

12. (canceled)
13. (previously presented): The compound of claim 1, wherein n is 2-3.
14. (previously presented): The compound of claim 1, wherein NR^3R^4 is an acyclic amine, or guanidinyll or a tautomer thereof.
15. (previously presented): The compound of claim 1, wherein NR^3R^4 is morpholine, thiomorpholine, imidazole, pyrrolidine, piperazine, pyridine or piperidine.
16. (previously presented): The compound of claim 1, wherein U is
$$\text{NR}^1 - (\text{CR}^1_2)_n - \text{NR}^3\text{R}^4.$$
17. (currently amended): The compound of claim 16, wherein X is NR^1R^2 , and R^1 and R^2 together with N in NR^1R^2 , and R^3 and R^4 together with N in NR^3R^4 each independently form a substituted 5-6 membered ring containing one or more N, O or S.
18. (original): The compound of claim 17, wherein X is optionally substituted with amino, carbamate, a C_{1-10} alkyl containing one or more non-adjacent N, O or S, and optionally substituted with a heterocyclic ring; aryl or a saturated or unsaturated heterocyclic ring, each of which is optionally substituted.
19. (original): The compound of claim 17, wherein X is substituted with a heterocyclic ring selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-b]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole,

guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H- β -carboline.

20. (original): The compound of claim 17, wherein X and NR³R⁴ are independently morpholine, thiomorpholine, imidazole, pyrrolidine, piperazine, pyridine or piperidine.

21. (original): The compound of claim 20, wherein X and NR³R⁴ are independently pyrrolidine.

22. (original): The compound of claim 21, wherein X is substituted with pyrazine.

23. (original): The compound of claim 22, wherein W is naphthalenyl.

24. (original): The compound of claim 1, wherein W is benzene, pyridine, biphenyl, naphthalene, phenanthrene, quinoline, isoquinoline, quinazoline, cinnoline, phthalazine, quinoxaline, indole, benzimidazole, benzoxazole, benzthiazole, benzofuran, anthrone, xanthone, acridone, fluorenone, carbazolyl, pyrimido[4,3-*b*]furan, pyrido[4,3-*b*]indole, pyrido[2,3-*b*]indole, dibenzofuran, acridine or acridizine.

25-26. (canceled)

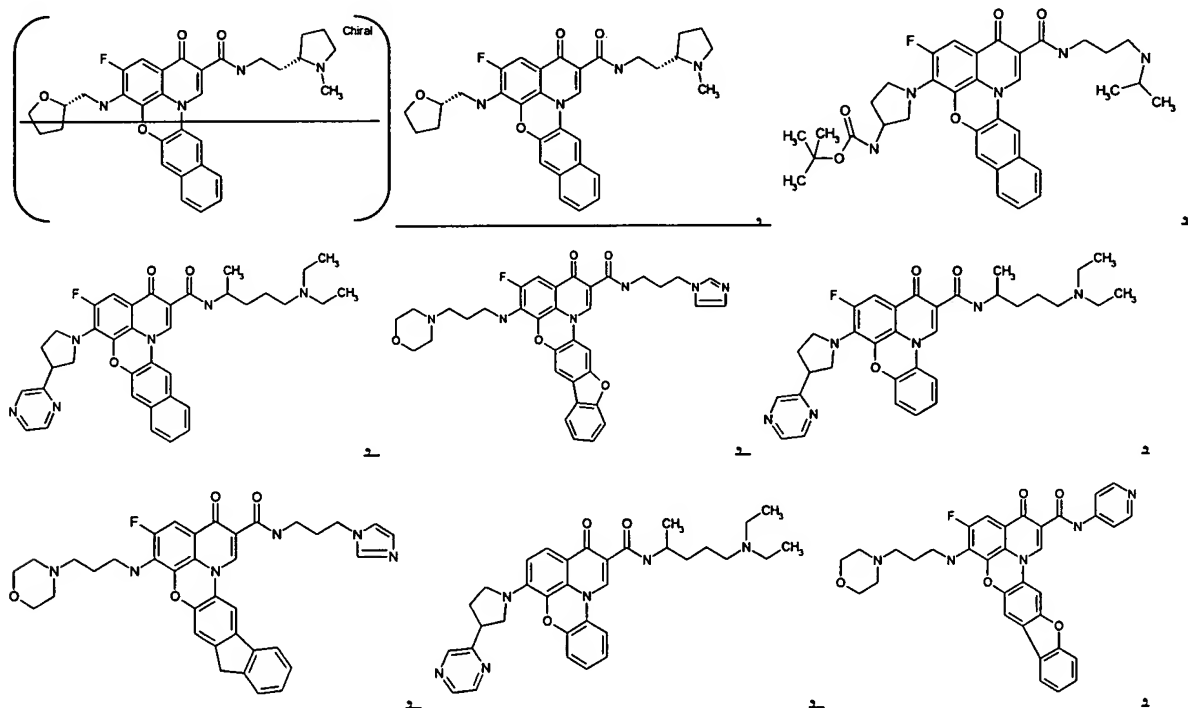
27. (original): The compound of claim 1, wherein said compound is chiral.

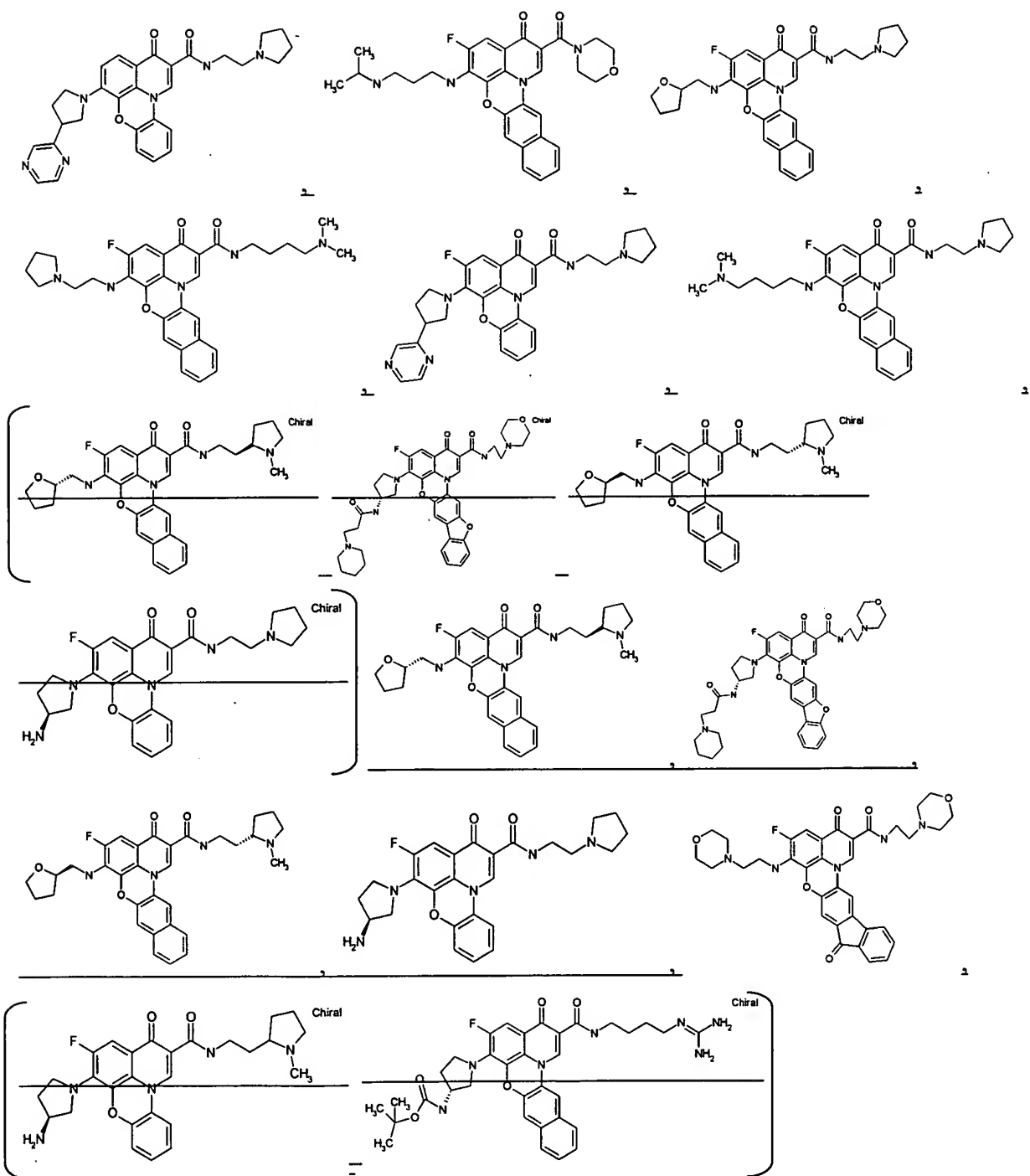
28. (original): A pharmaceutical composition comprising the compound of claim 1 and a pharmaceutically acceptable excipient.

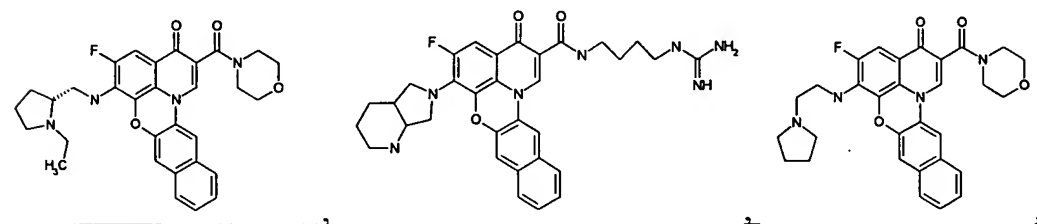
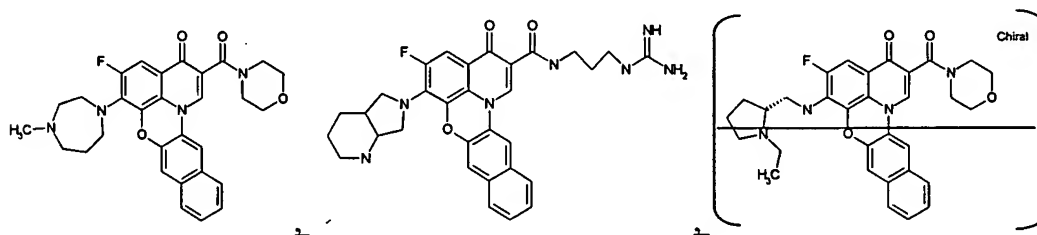
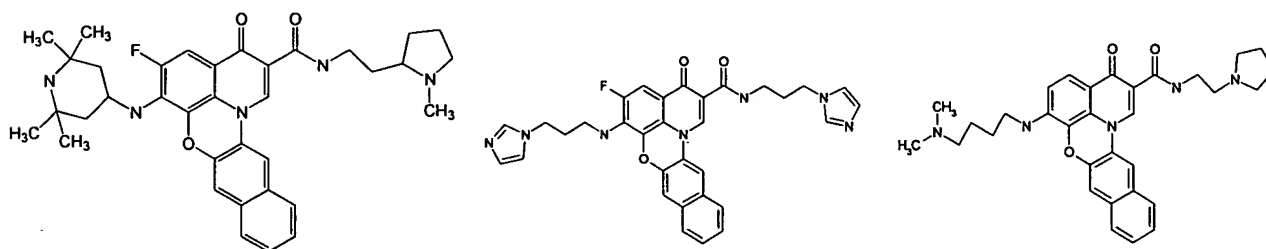
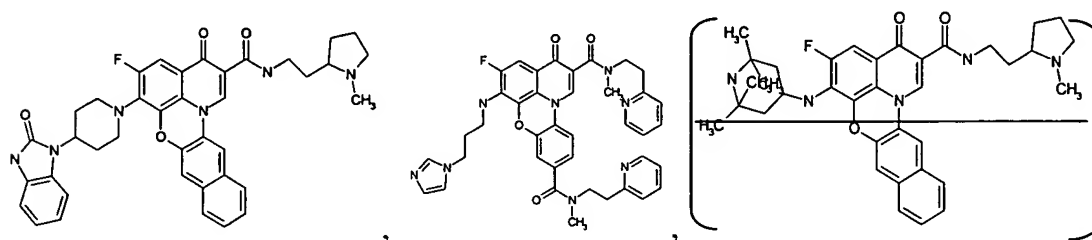
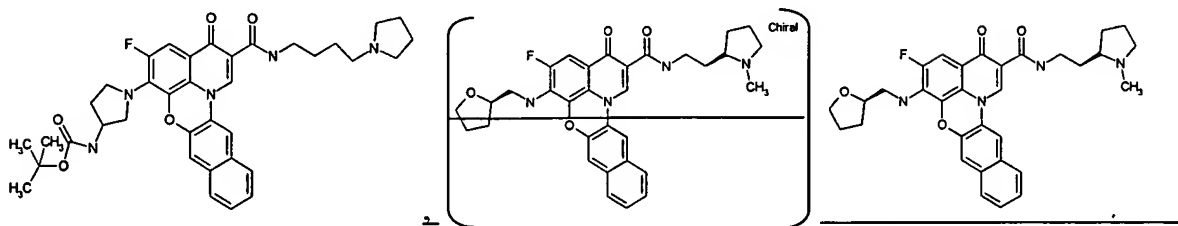
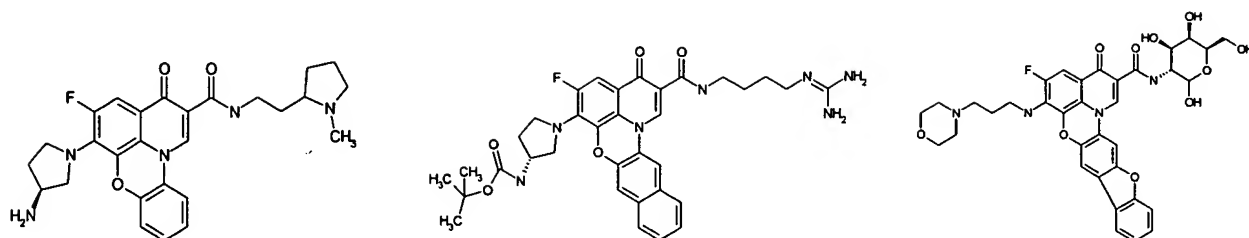
29-40. (canceled)

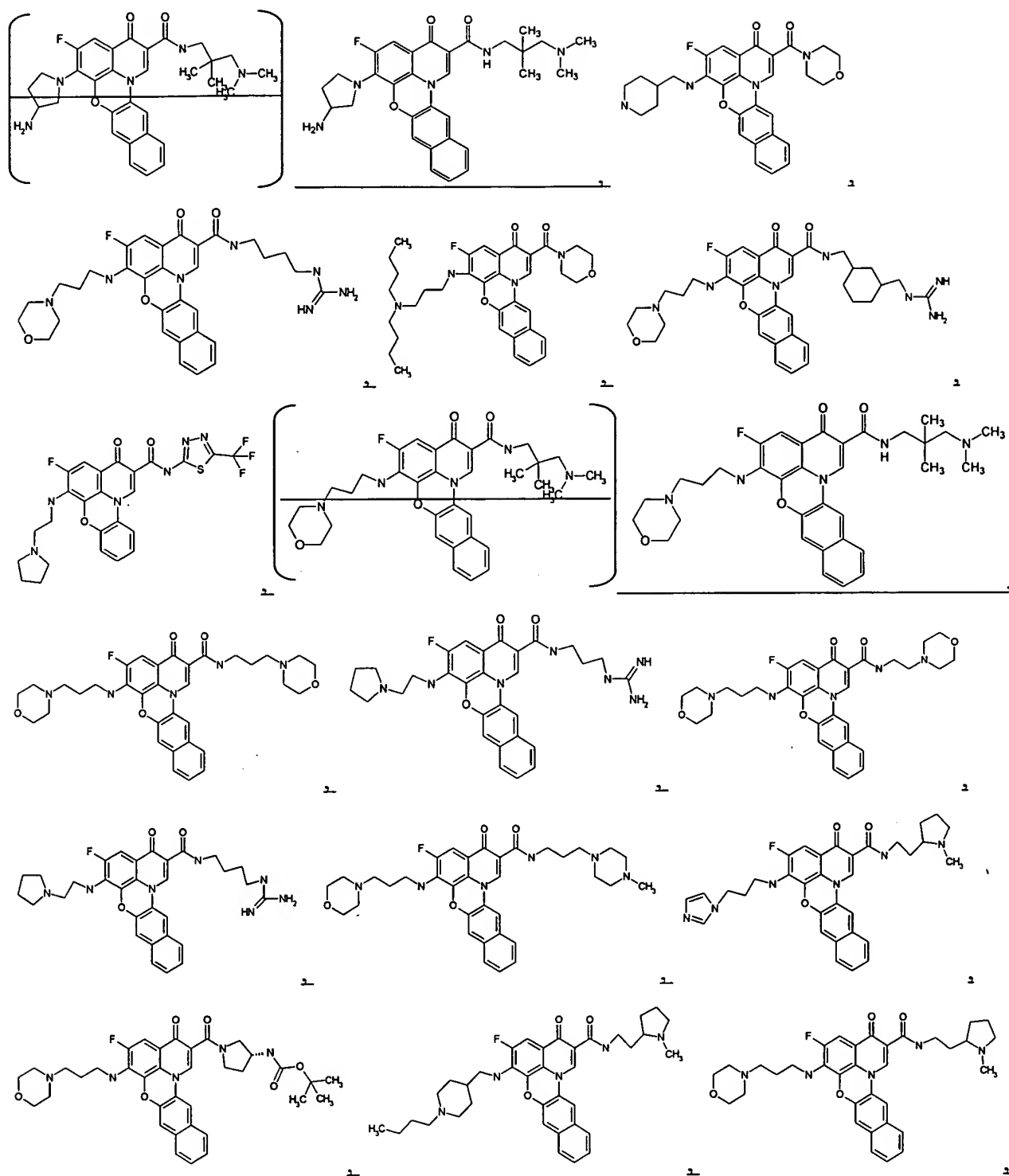
41. (previously presented): The compound of claim 1, wherein V is H or NH₂.
42. (original): The compound of claim 16, wherein V is H.
43. (original): The compound of claim 16, wherein A is fluoro.
44. (original): The compound of claim 16, wherein W is naphthalenyl.
45. (original): The compound of claim 23, wherein V is H and A is fluoro.

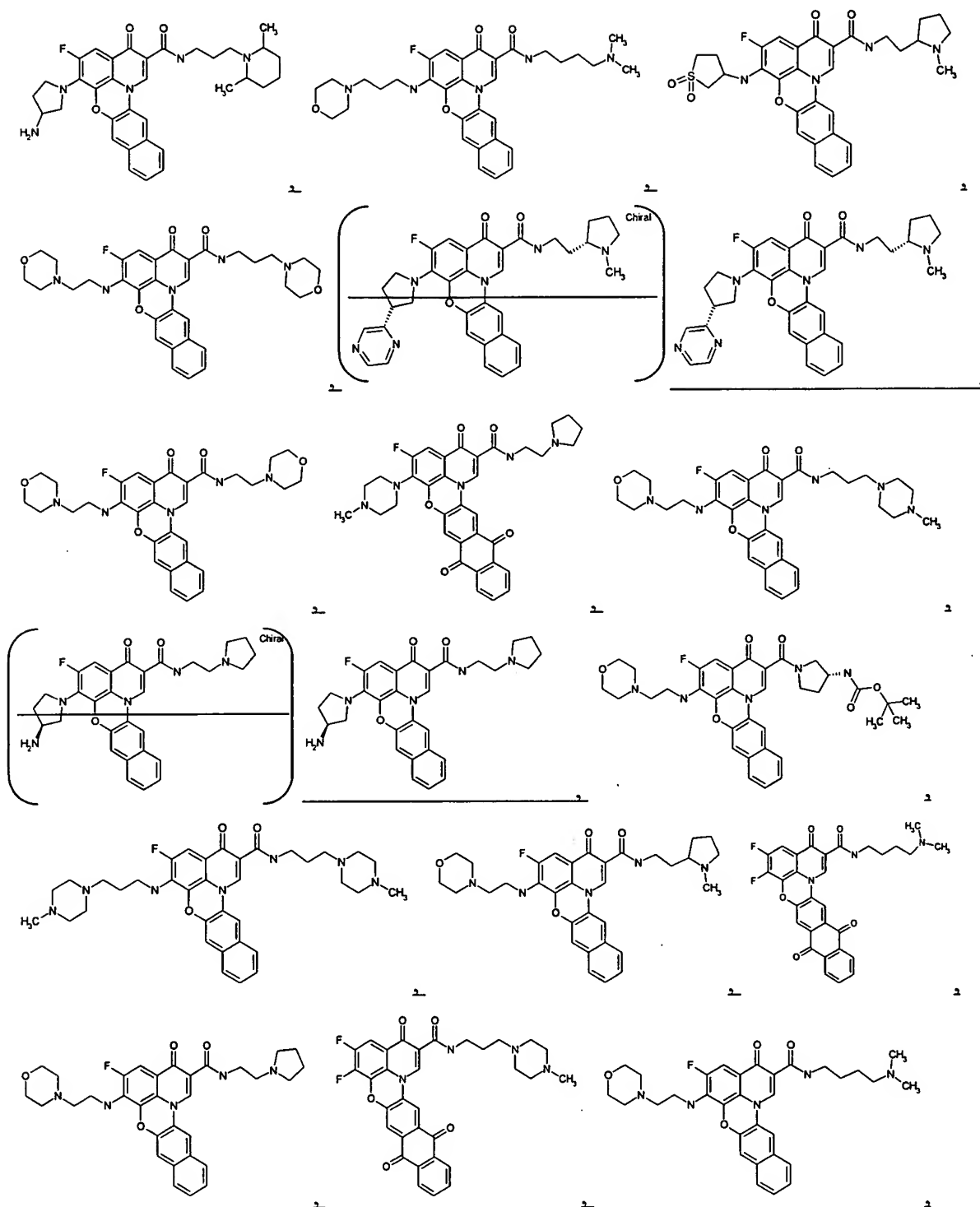
46. (currently amended): ~~The compound of claim 1, wherein said compound is~~
A compound selected from the group consisting of compounds

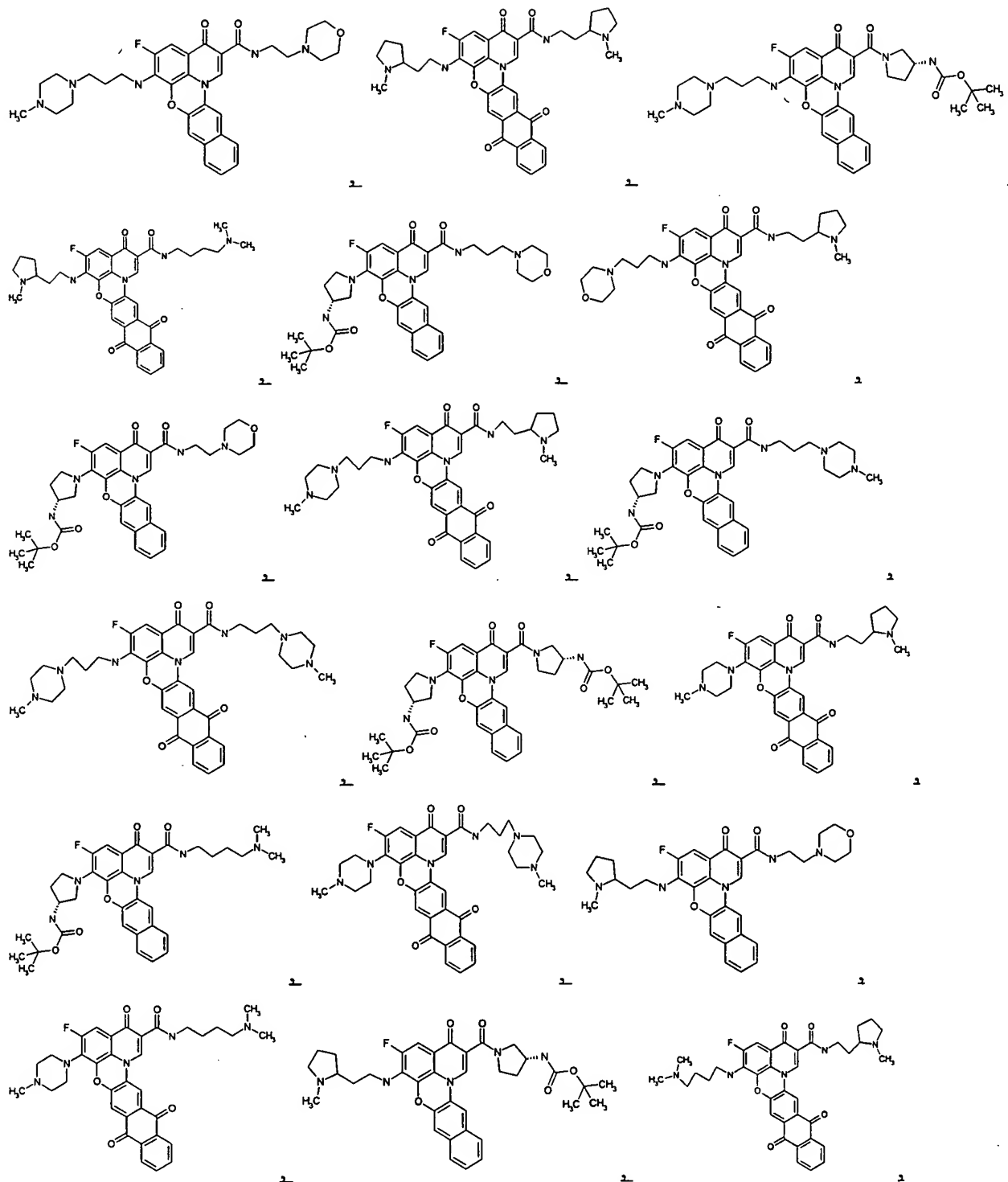


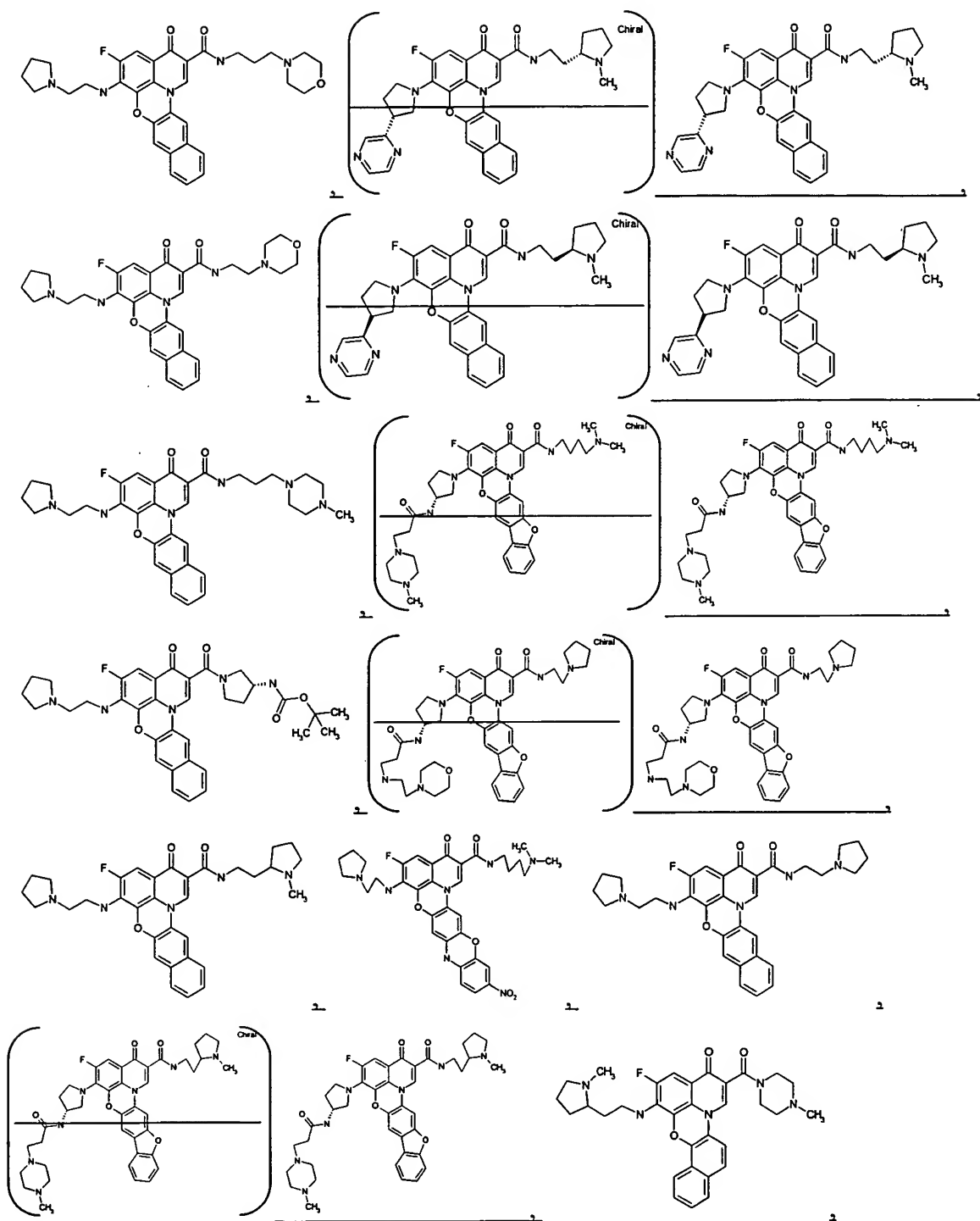


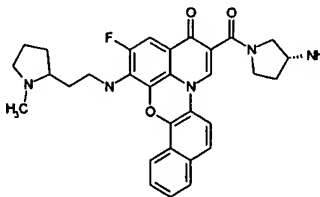
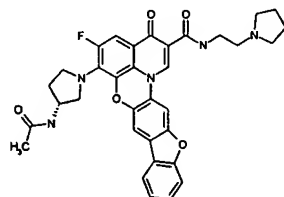
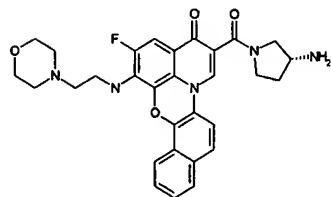
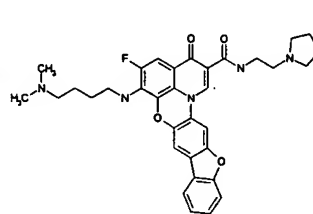
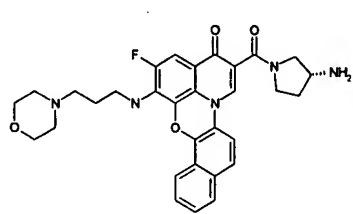
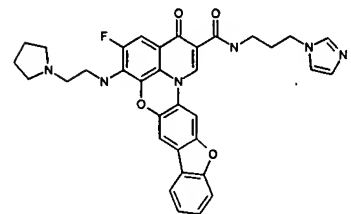
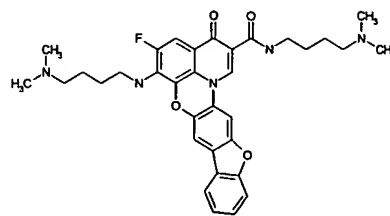
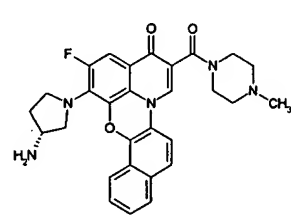
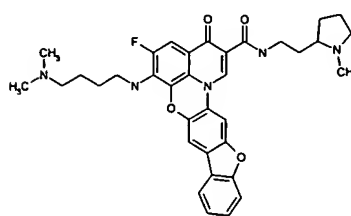
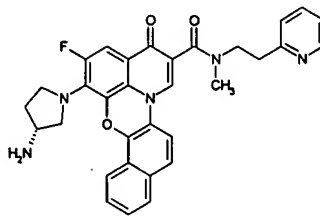
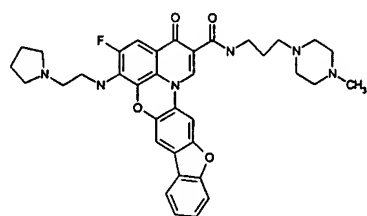
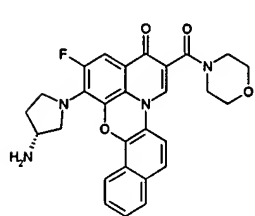
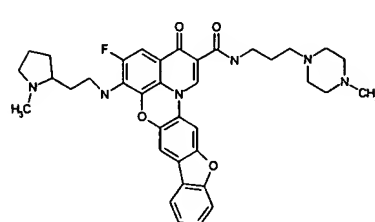
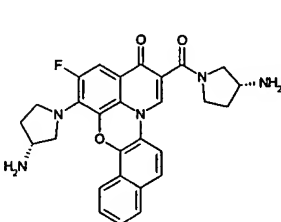
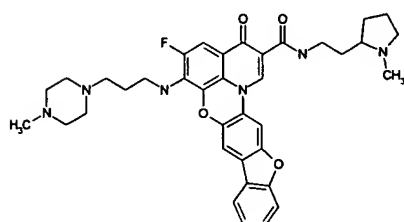
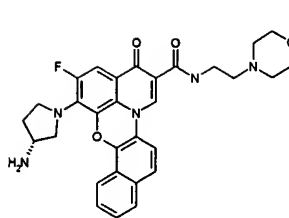
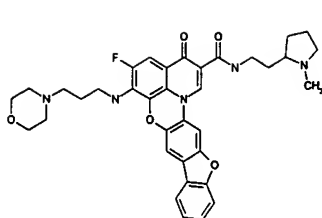
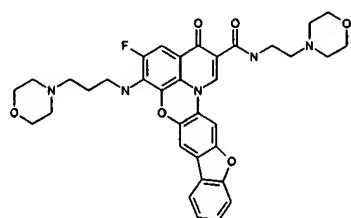


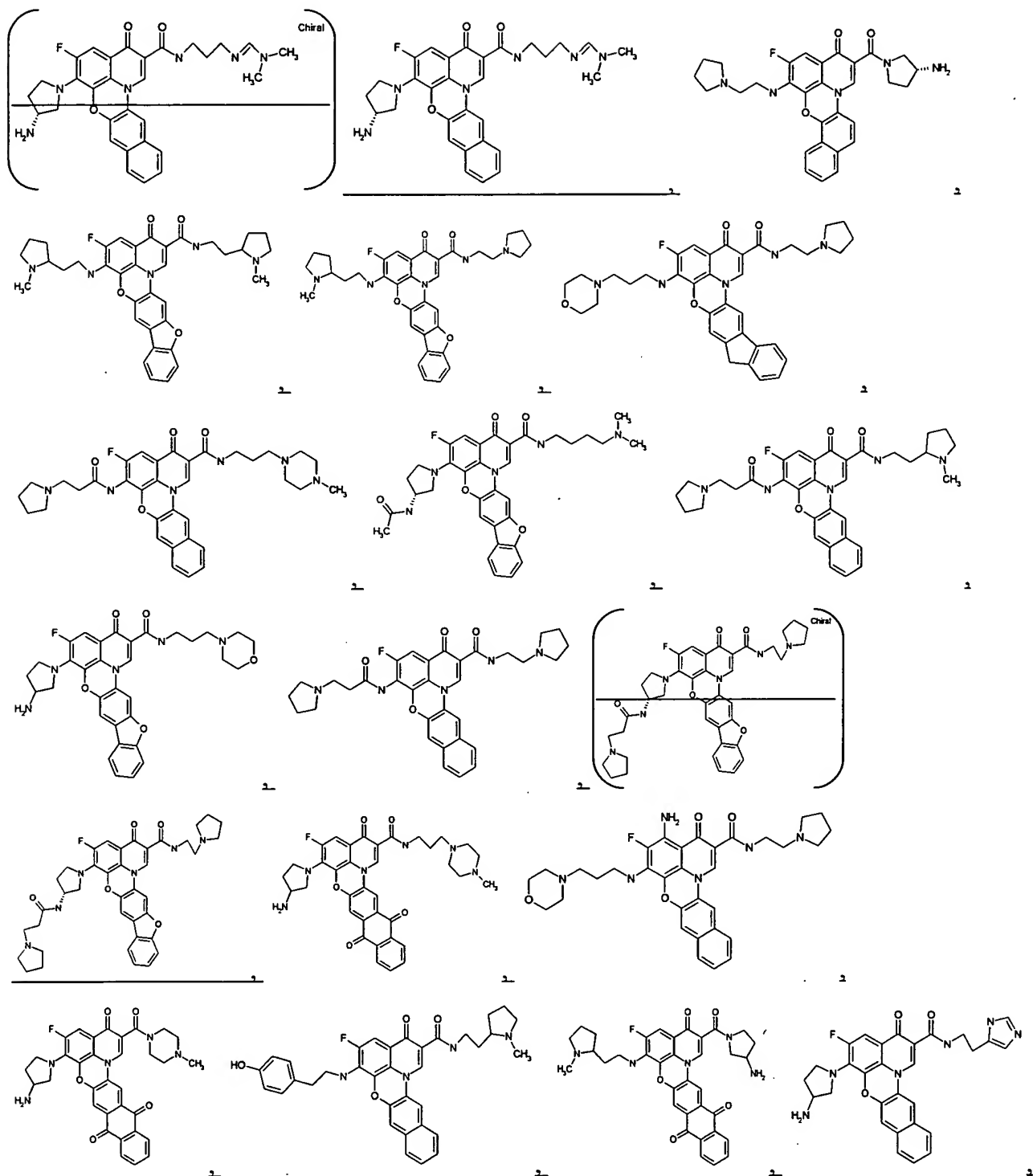


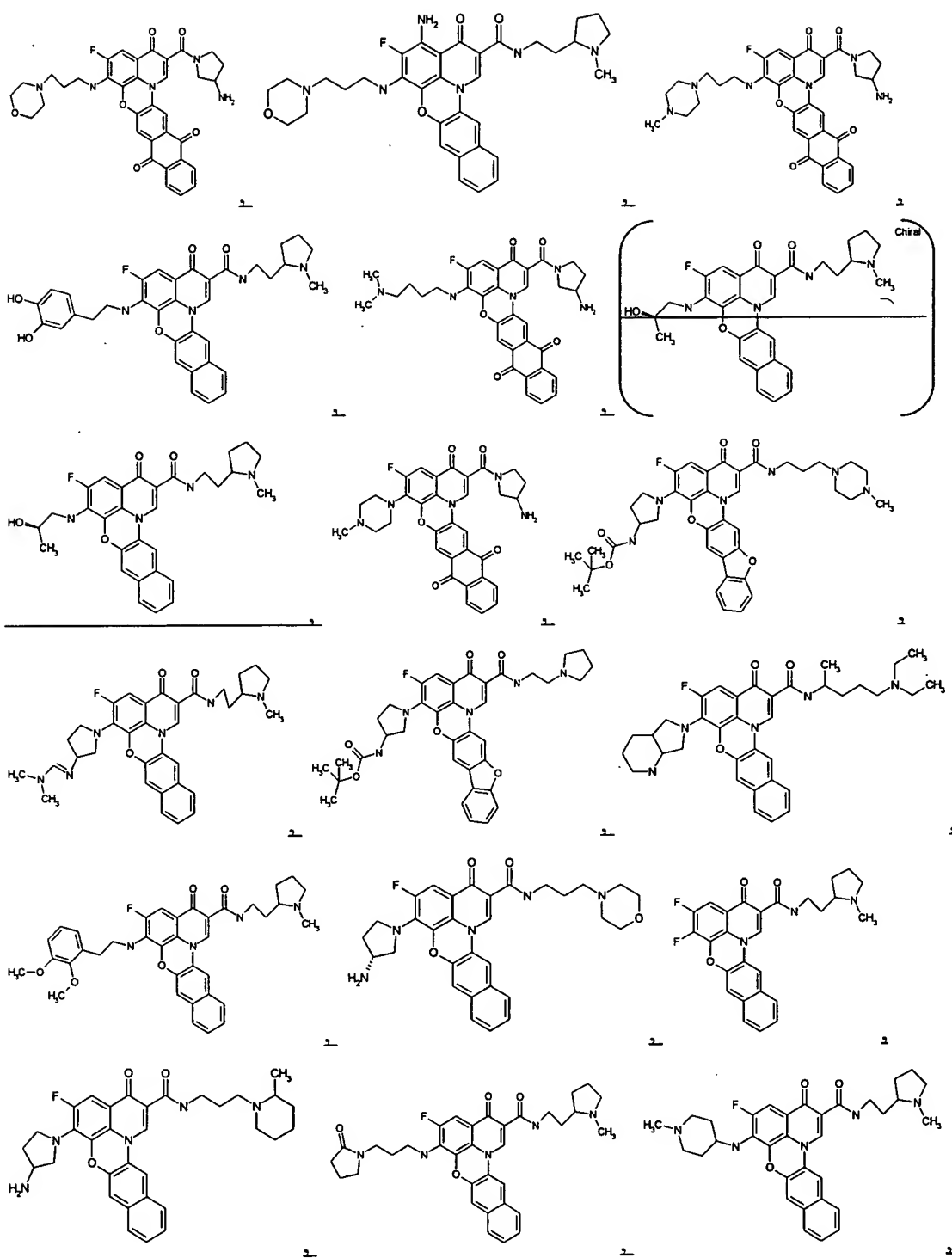


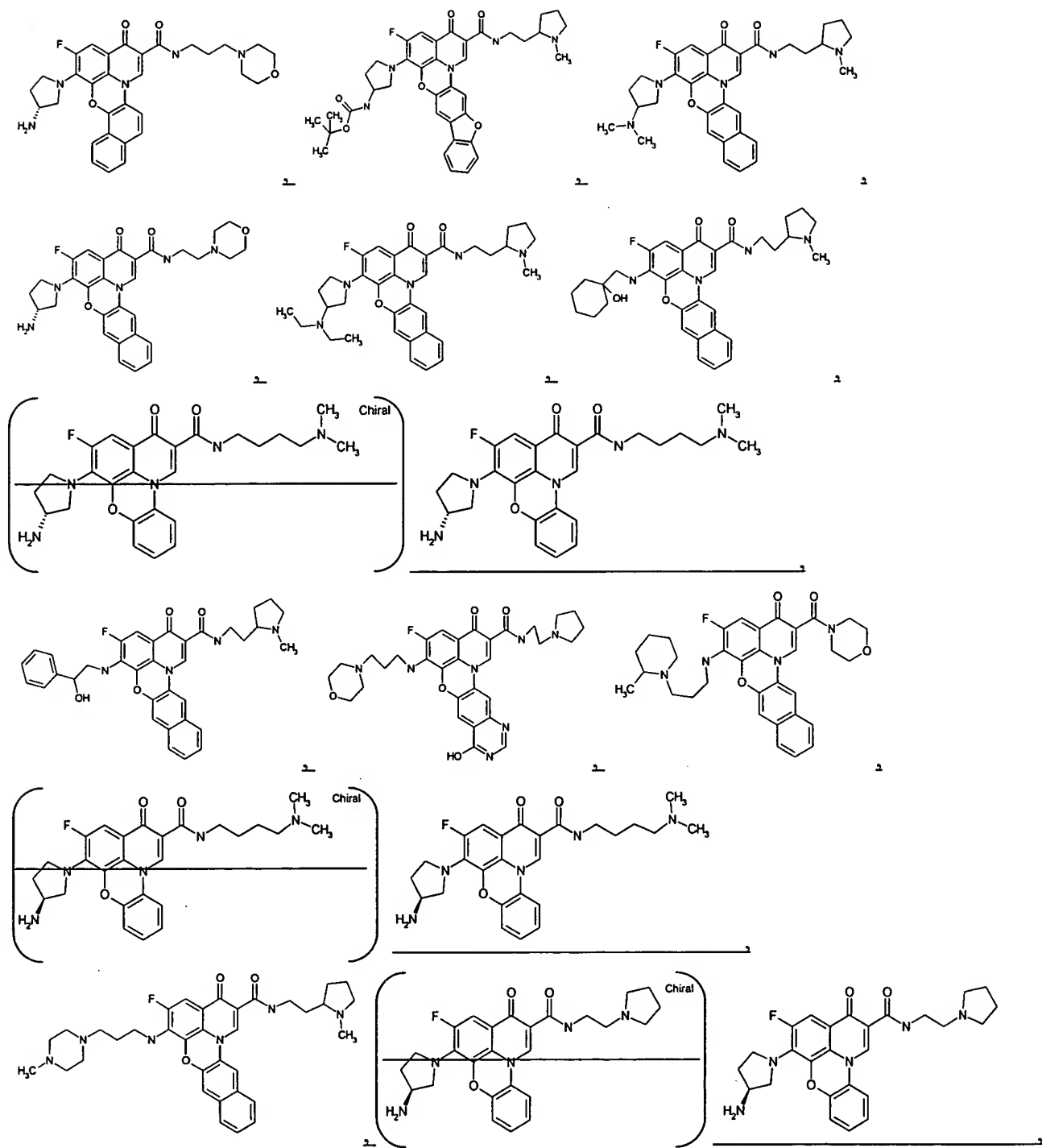


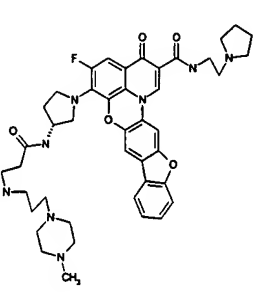
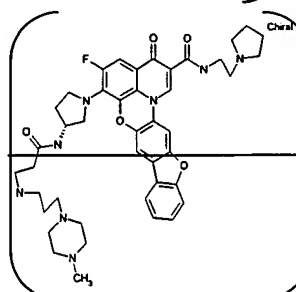
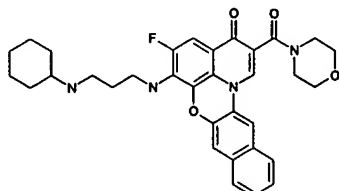
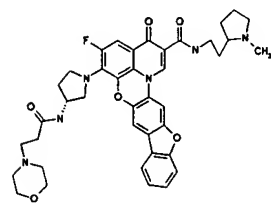
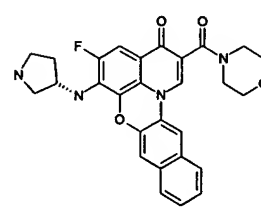
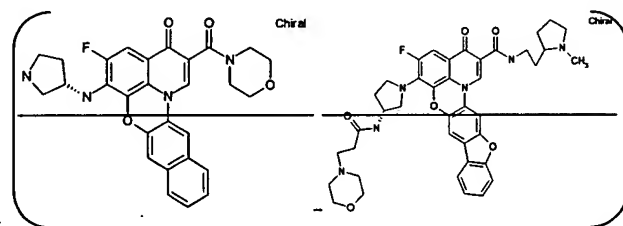
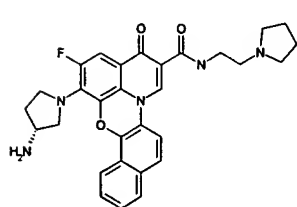
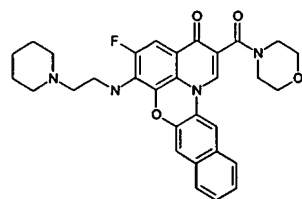
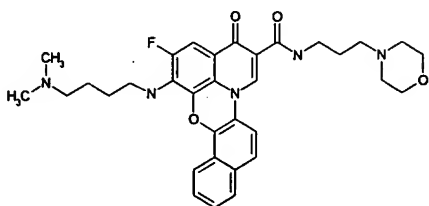
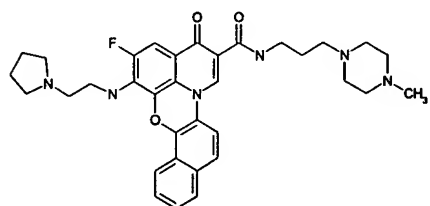
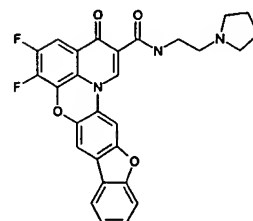
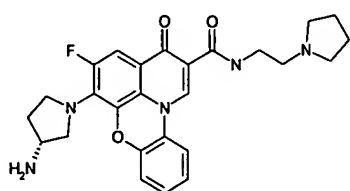
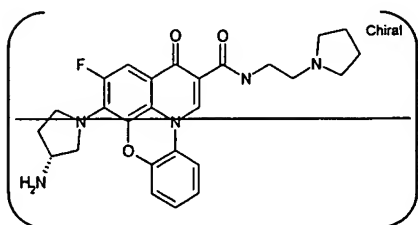
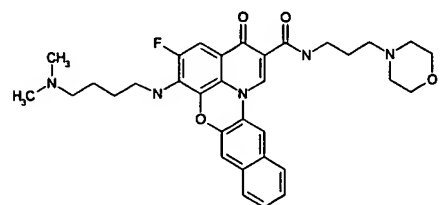
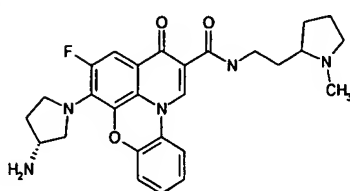
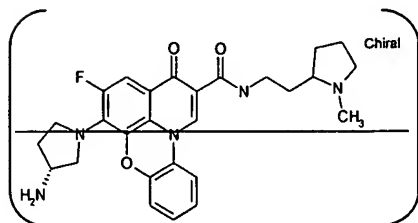
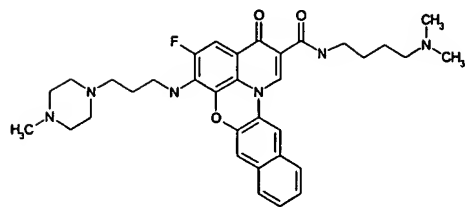
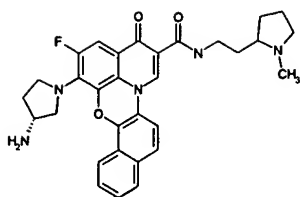
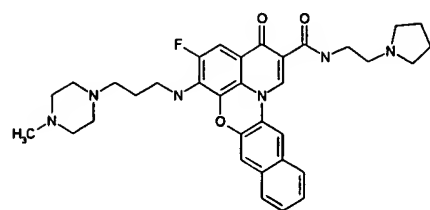


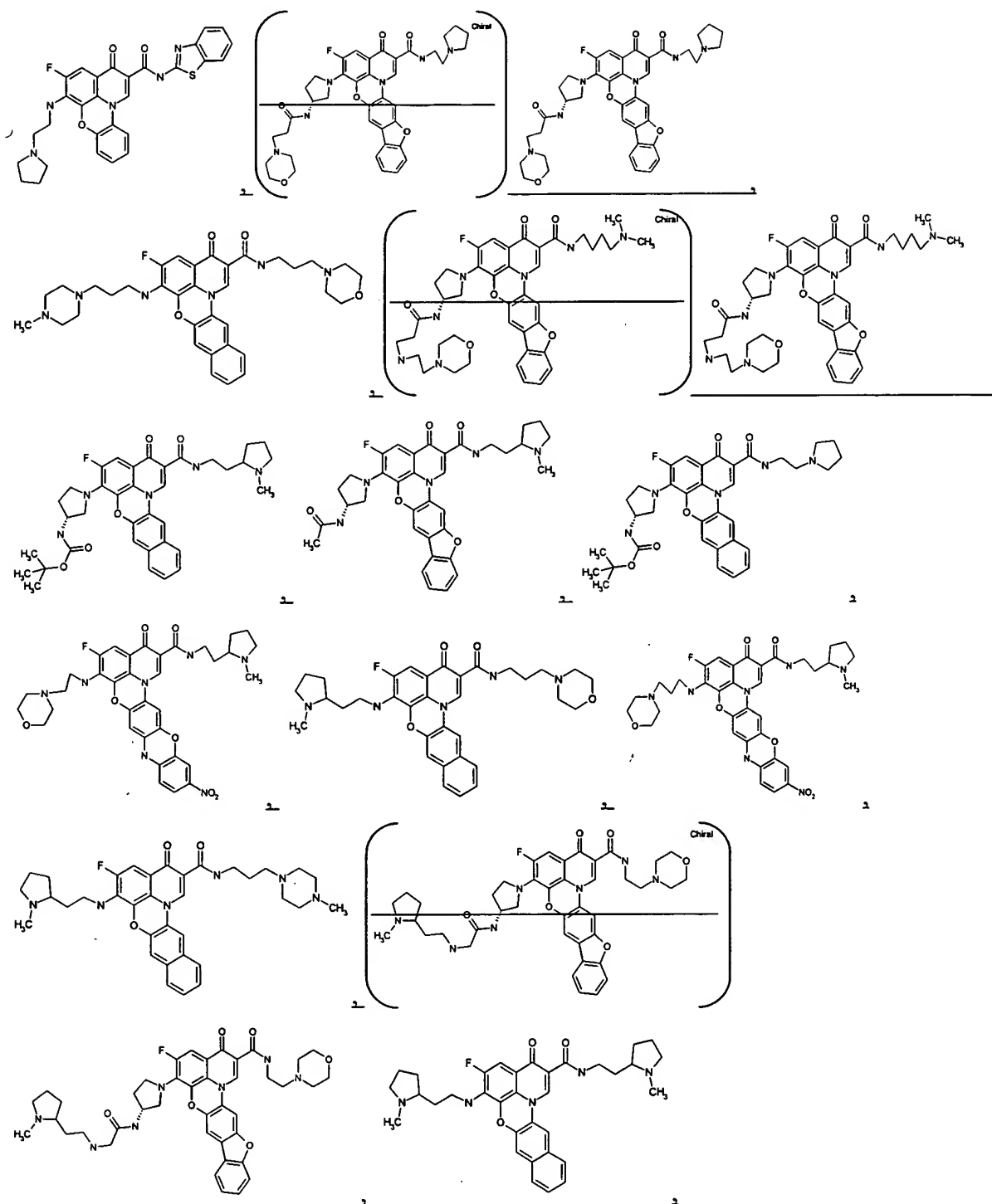


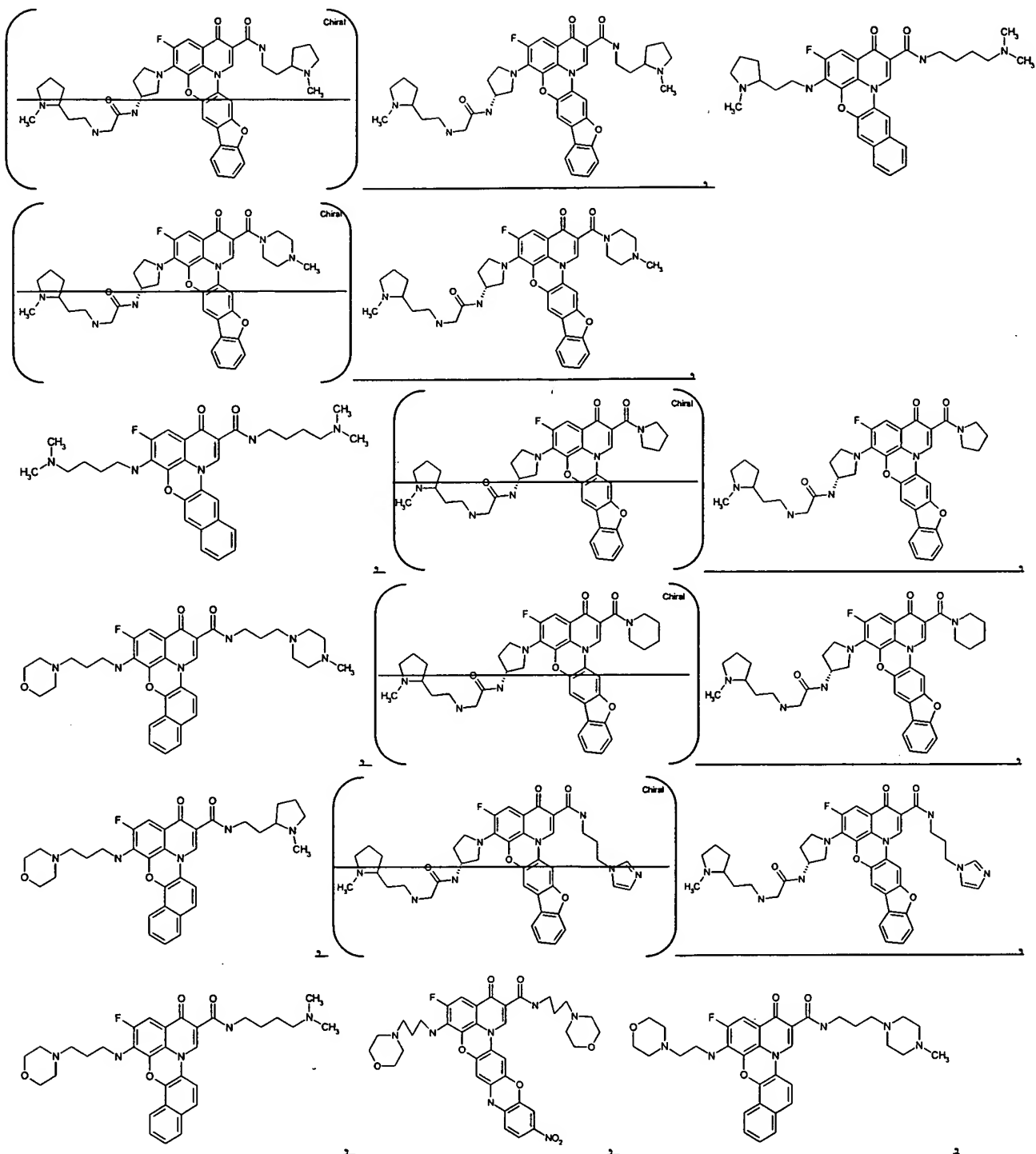


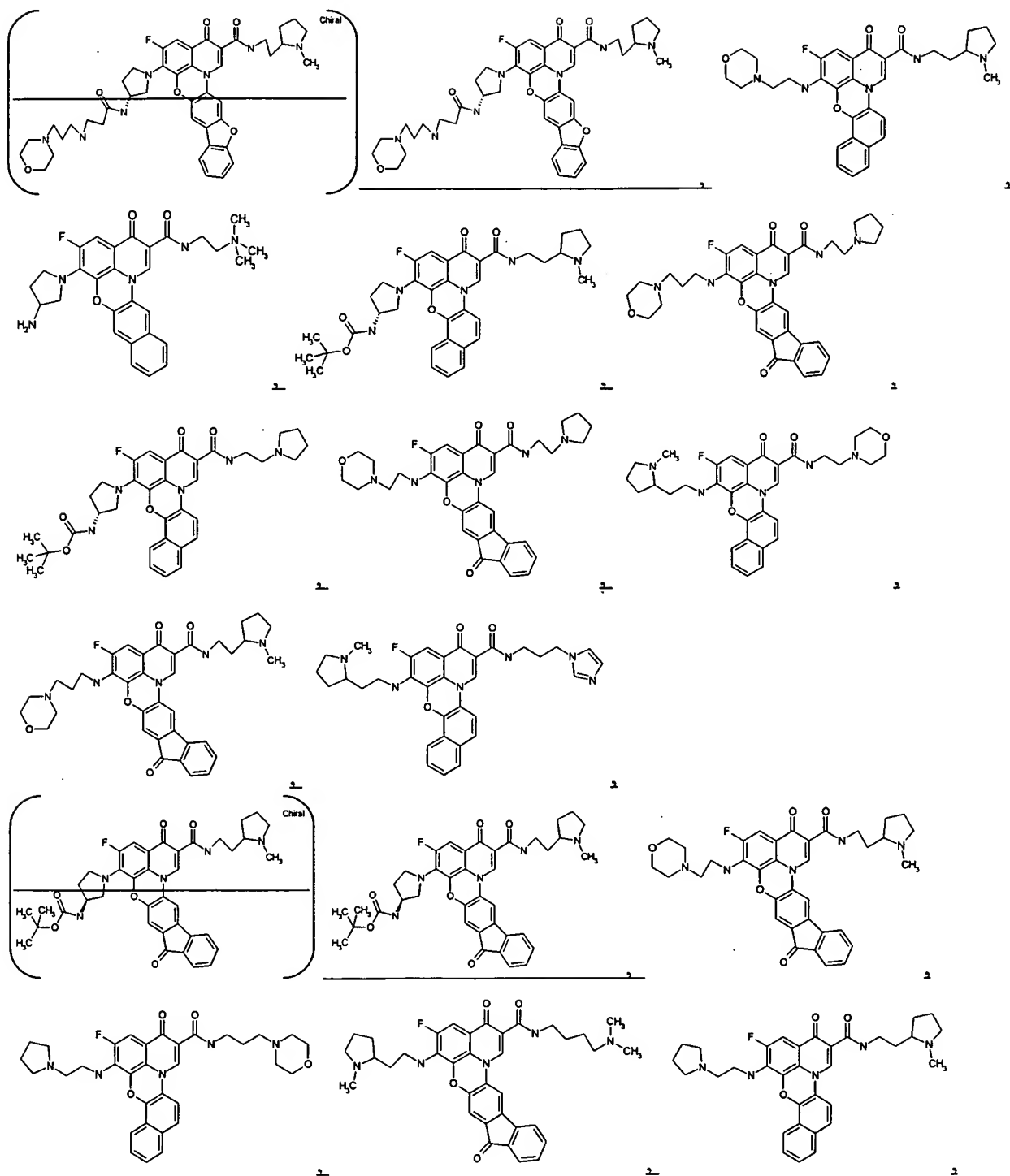


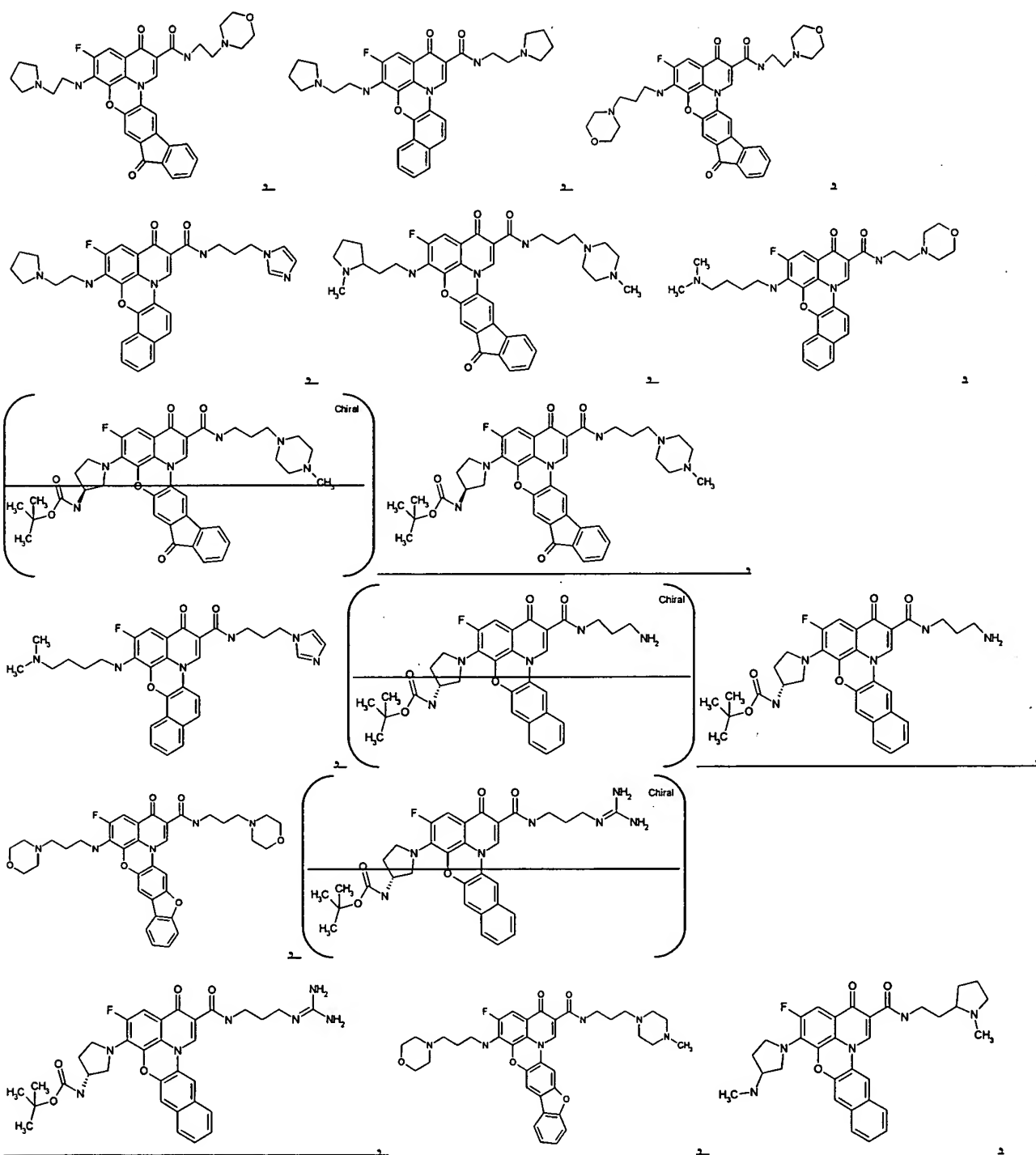


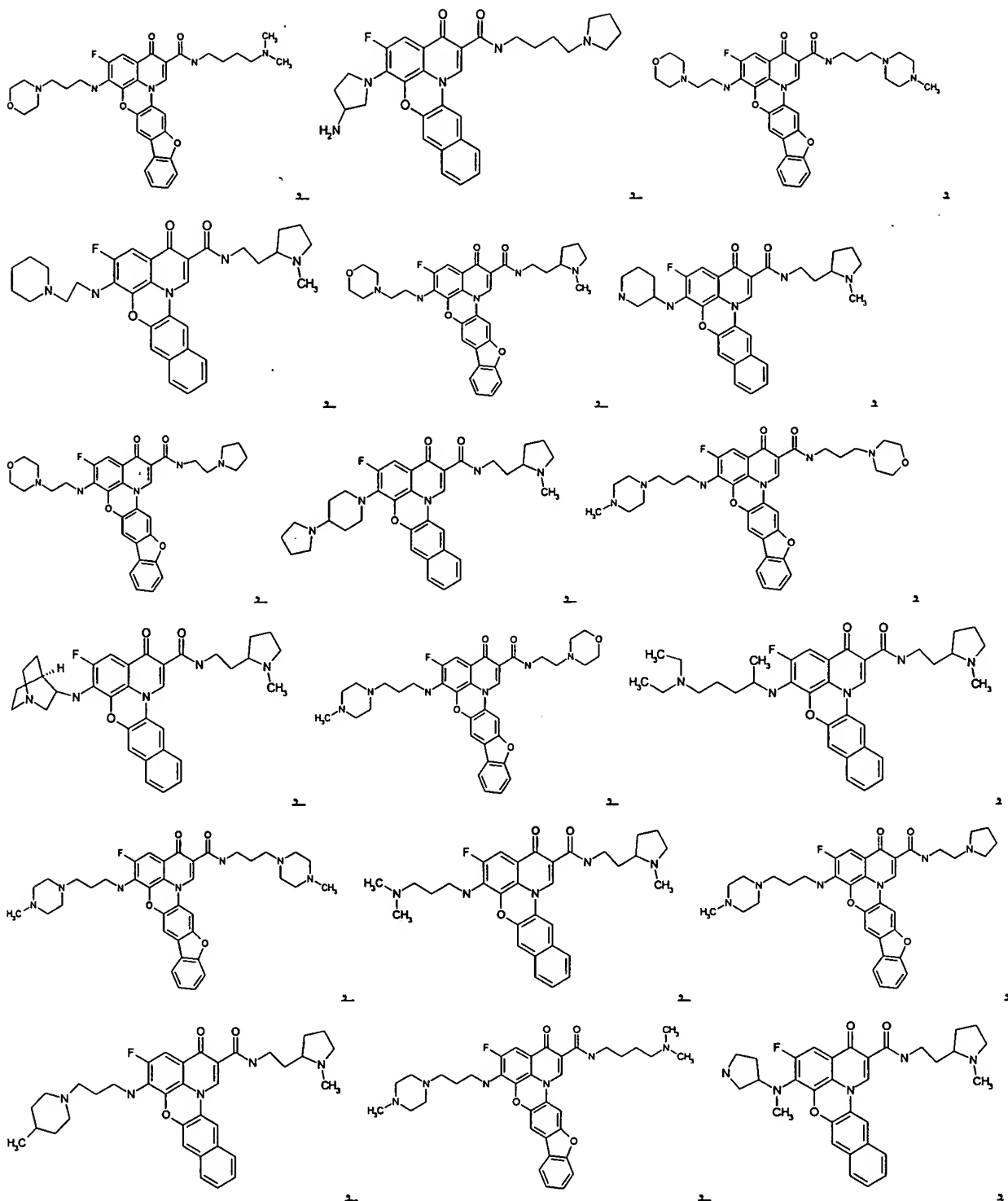


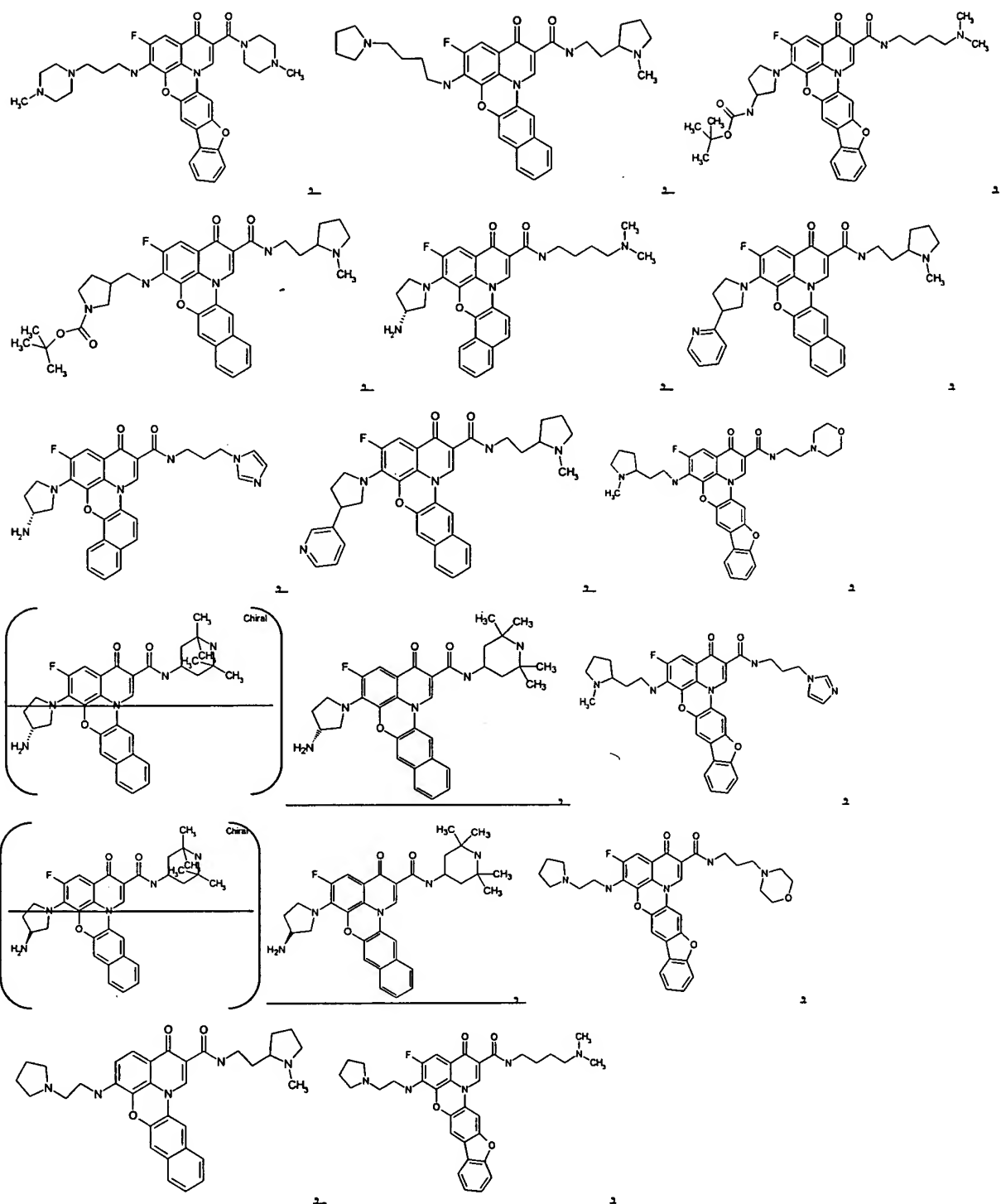


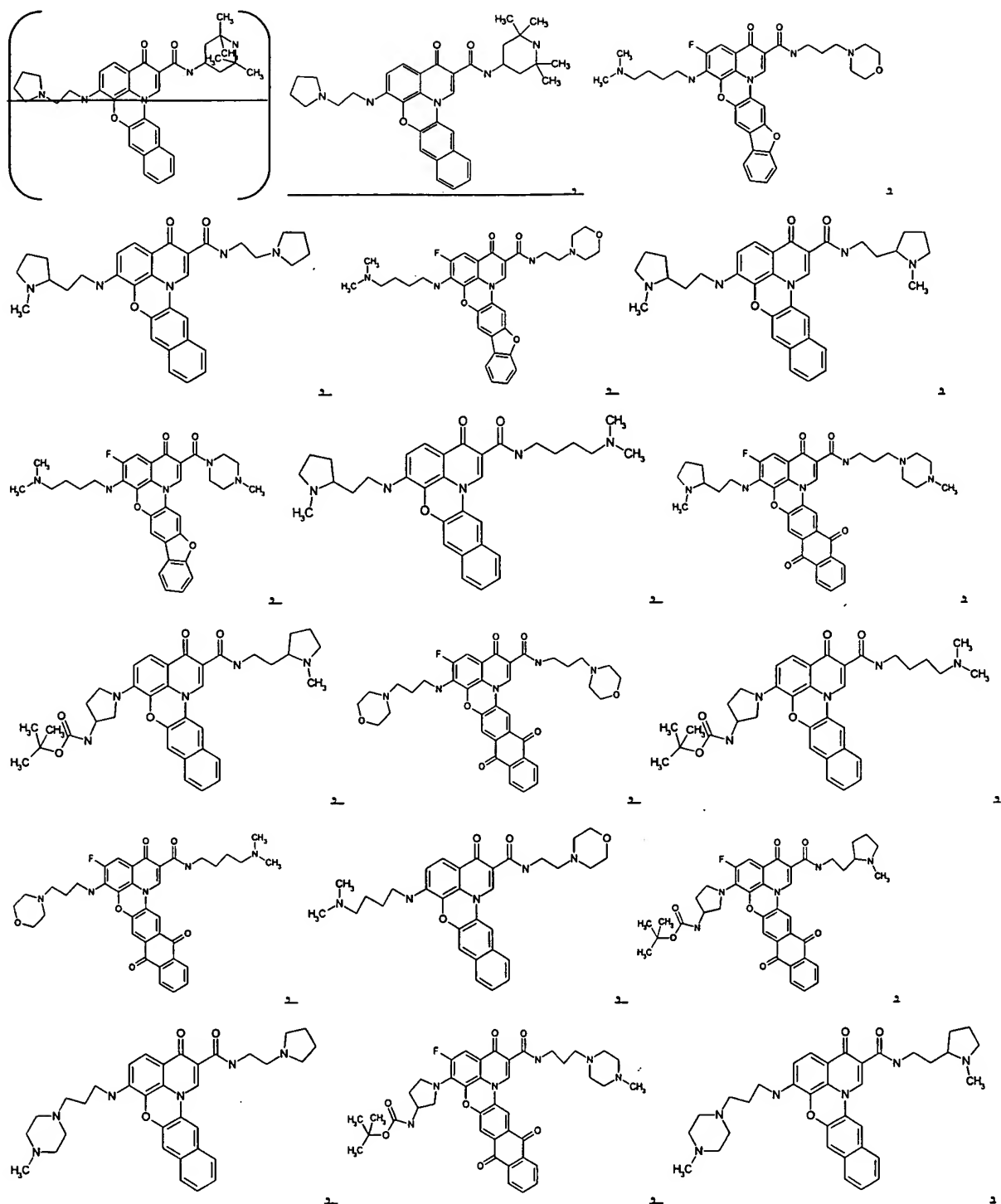


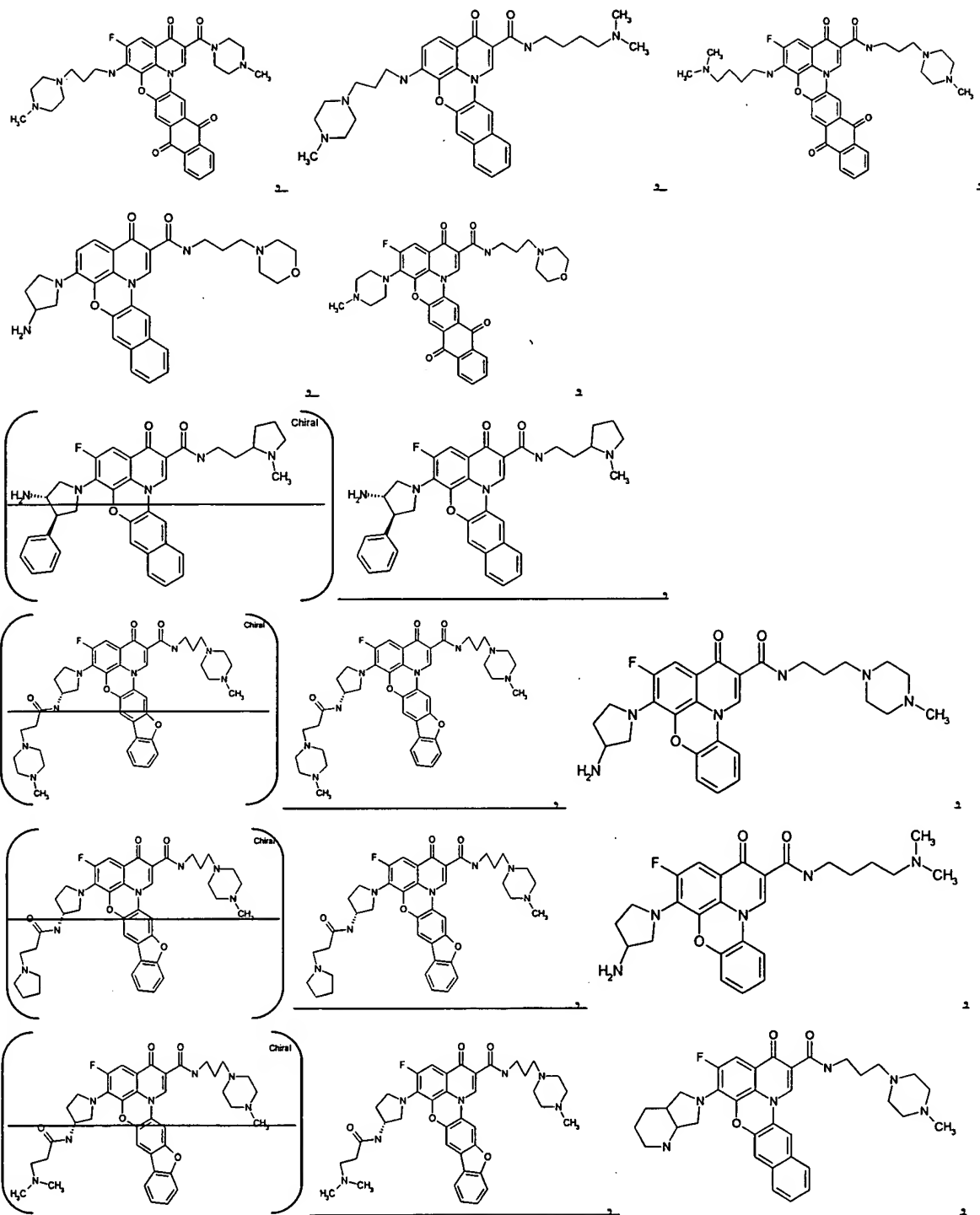


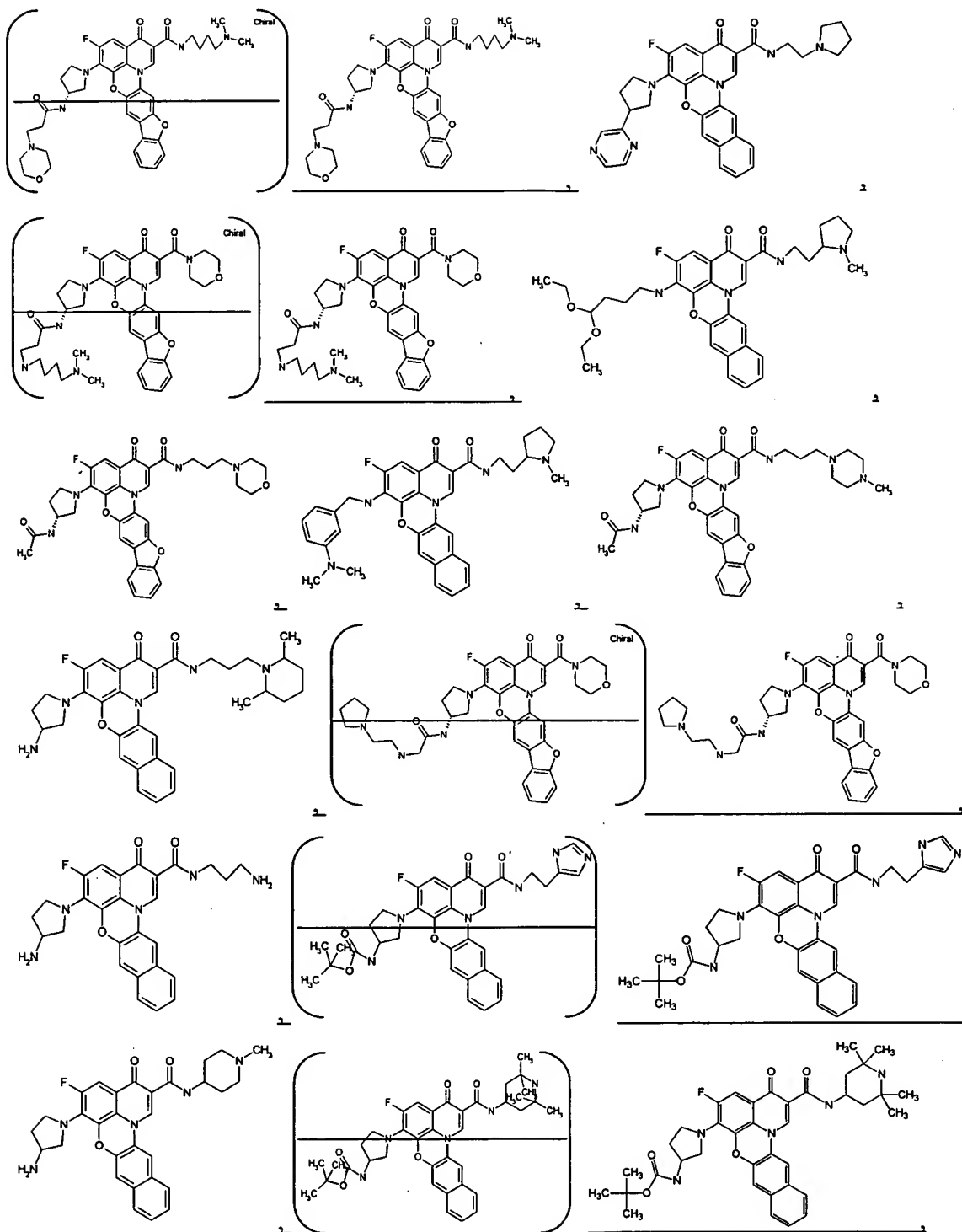


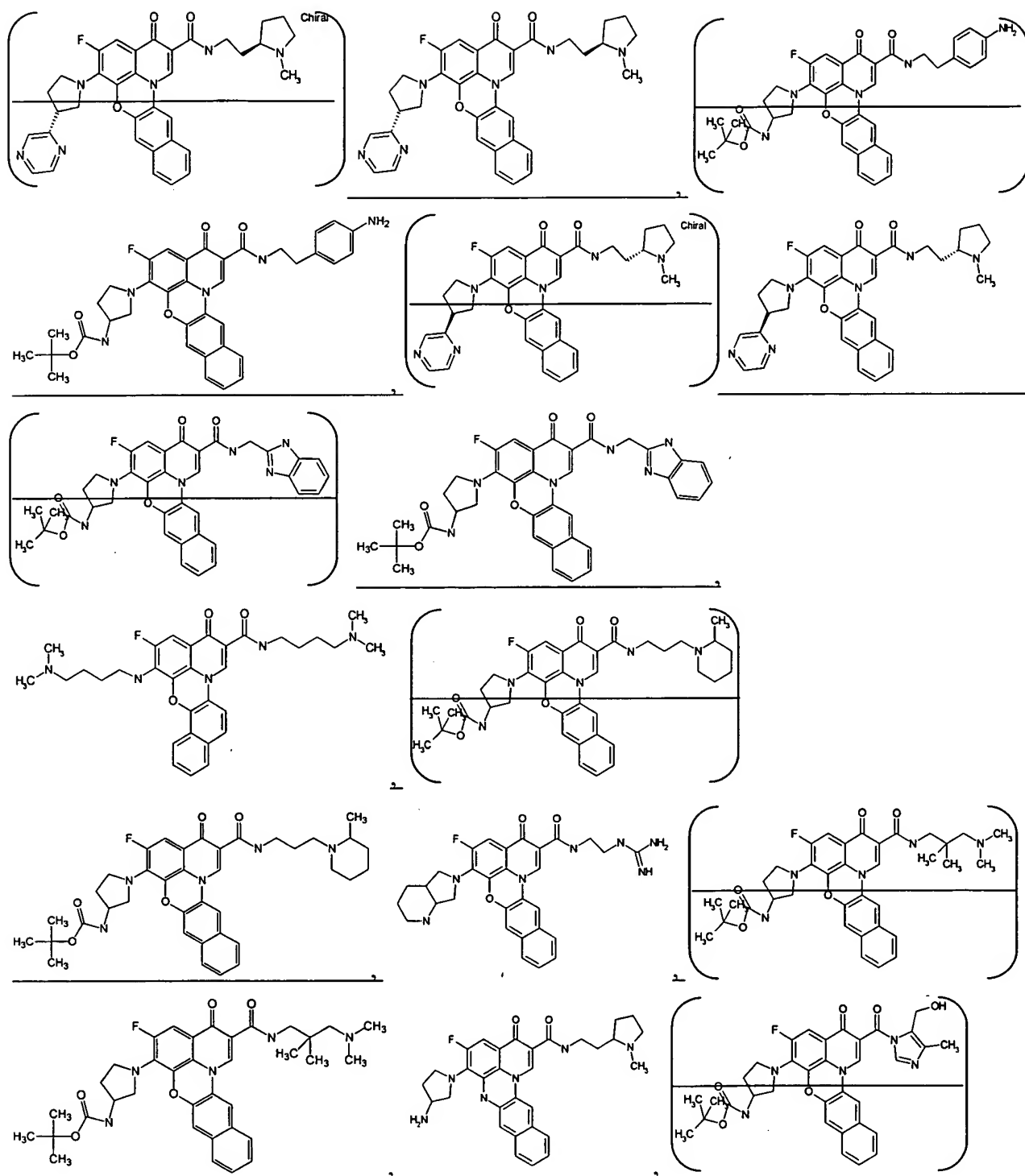


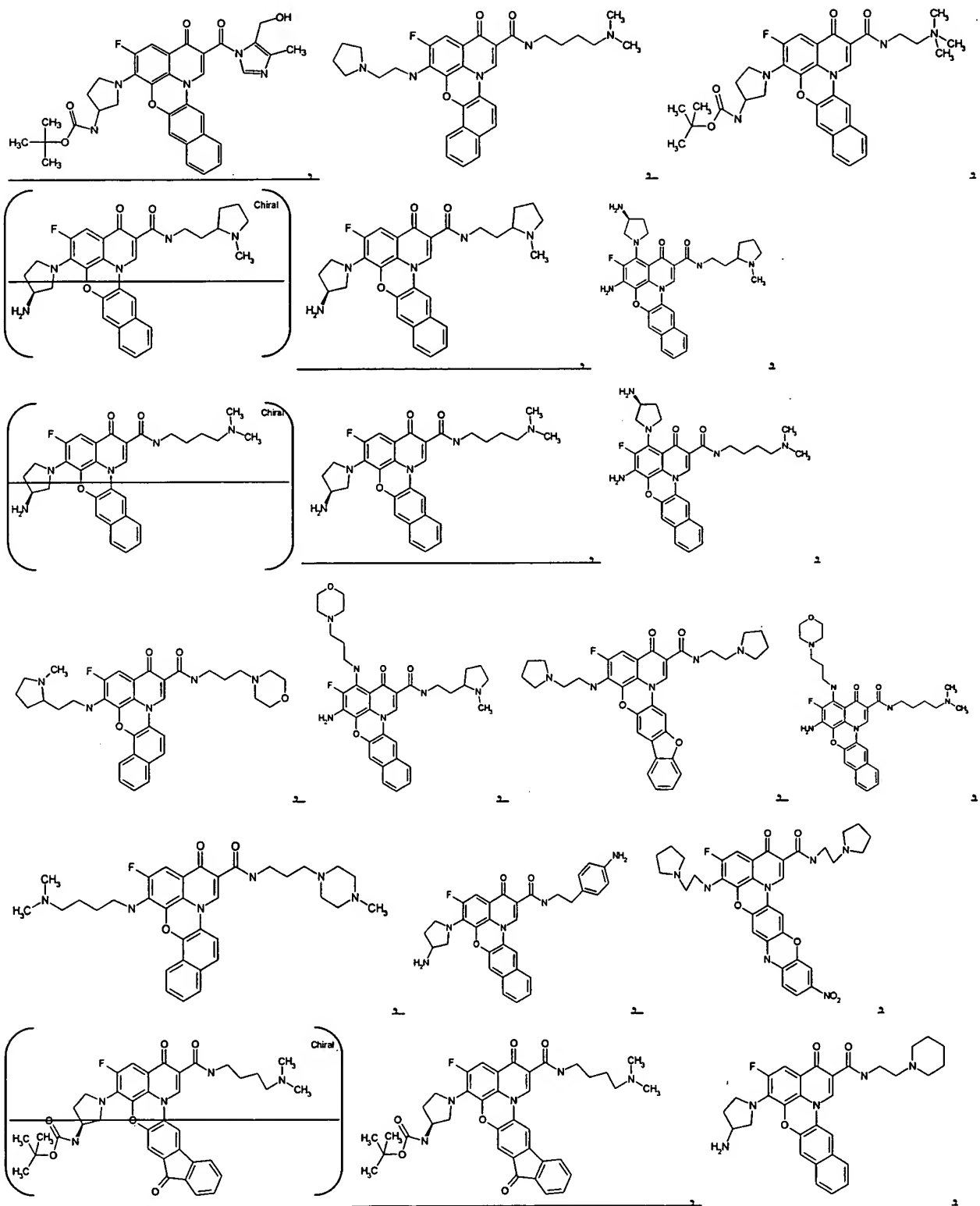


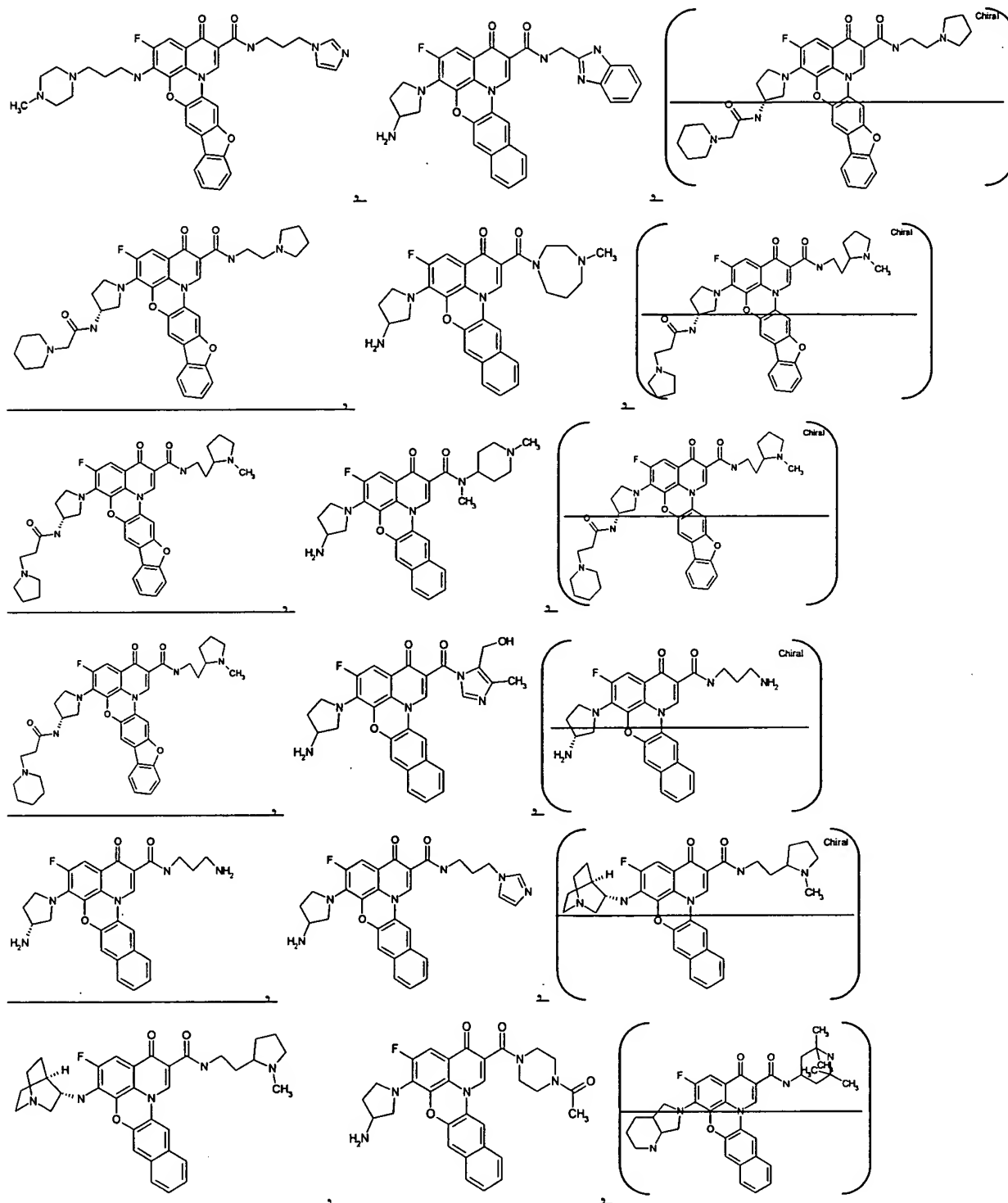


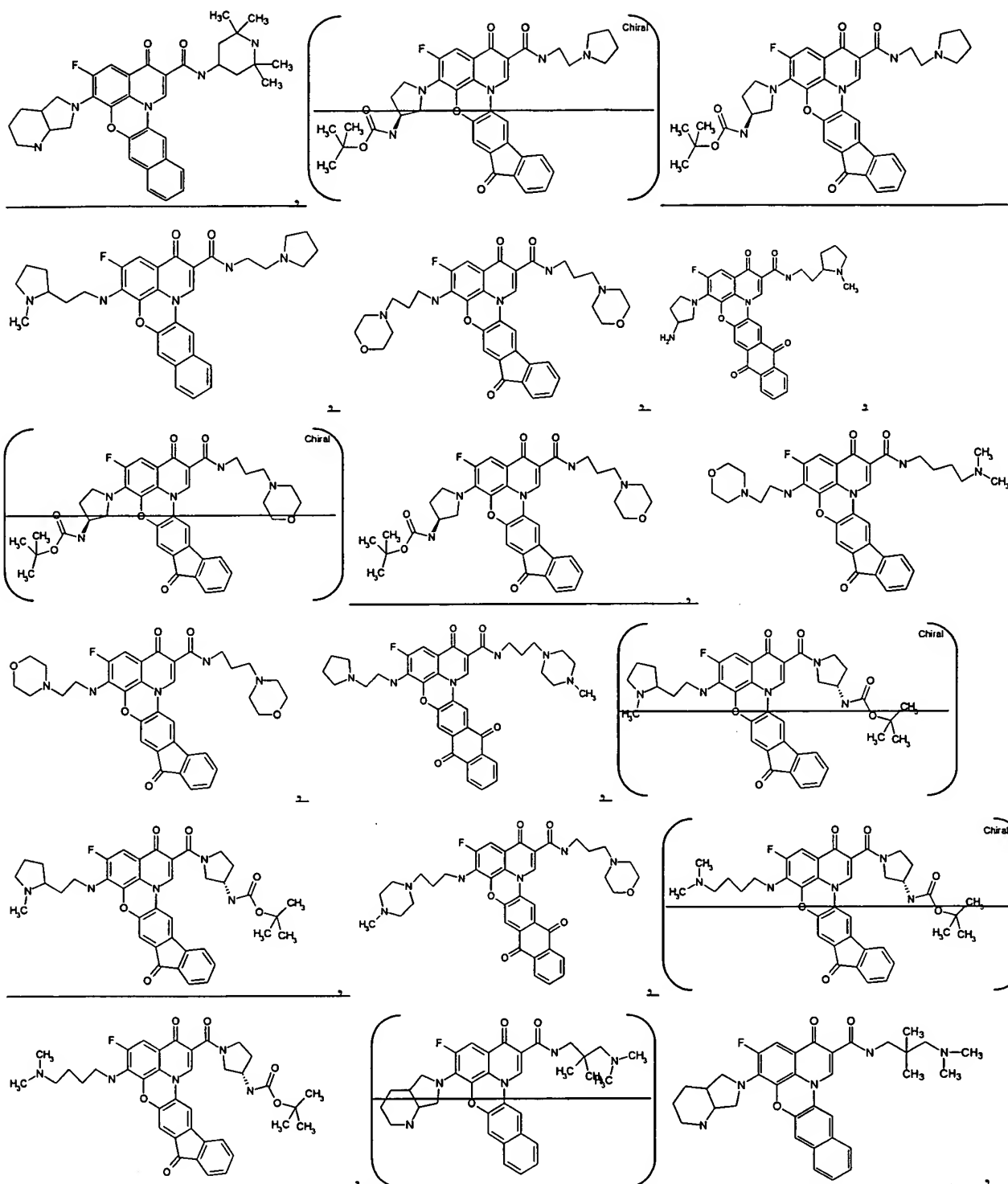


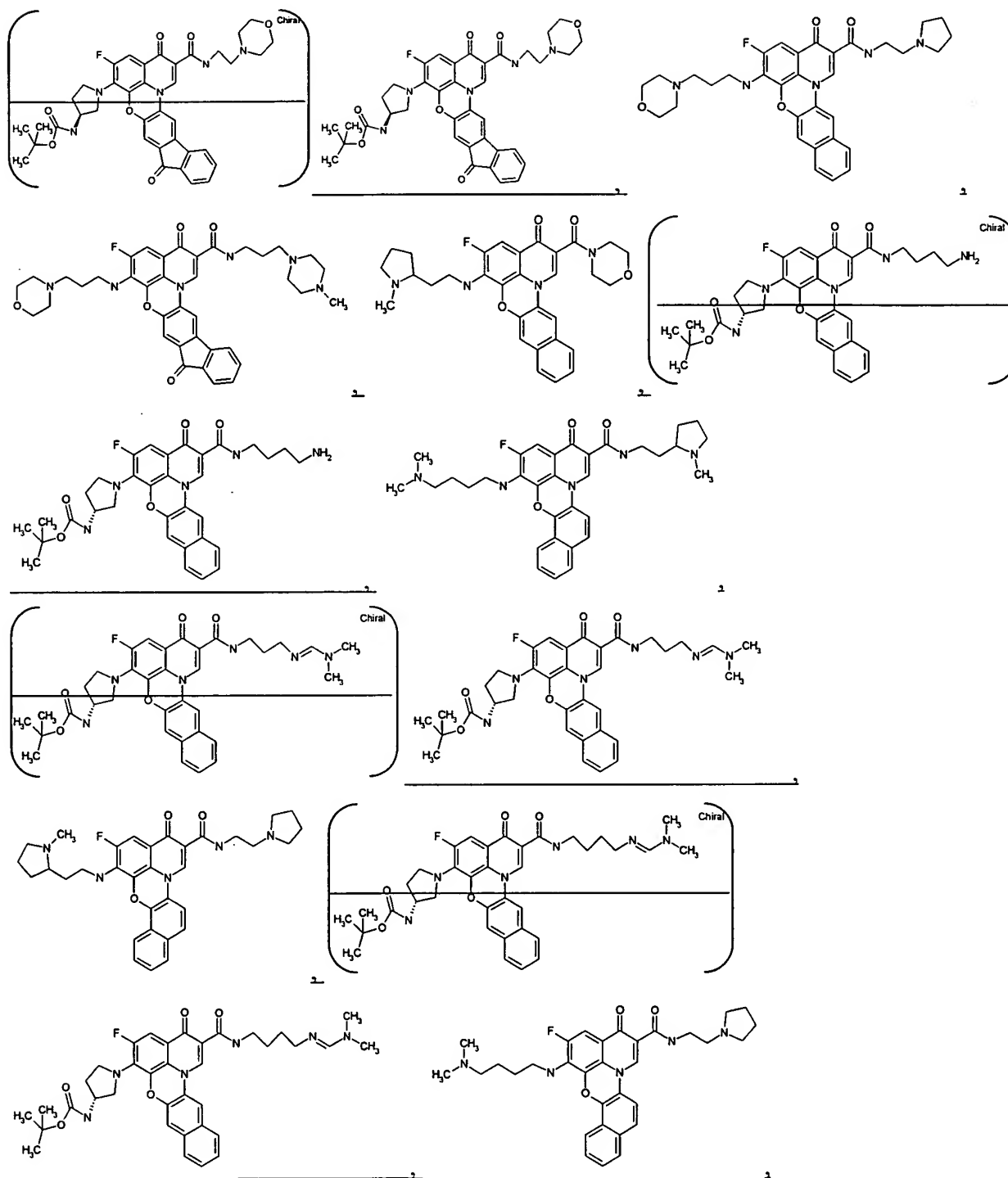


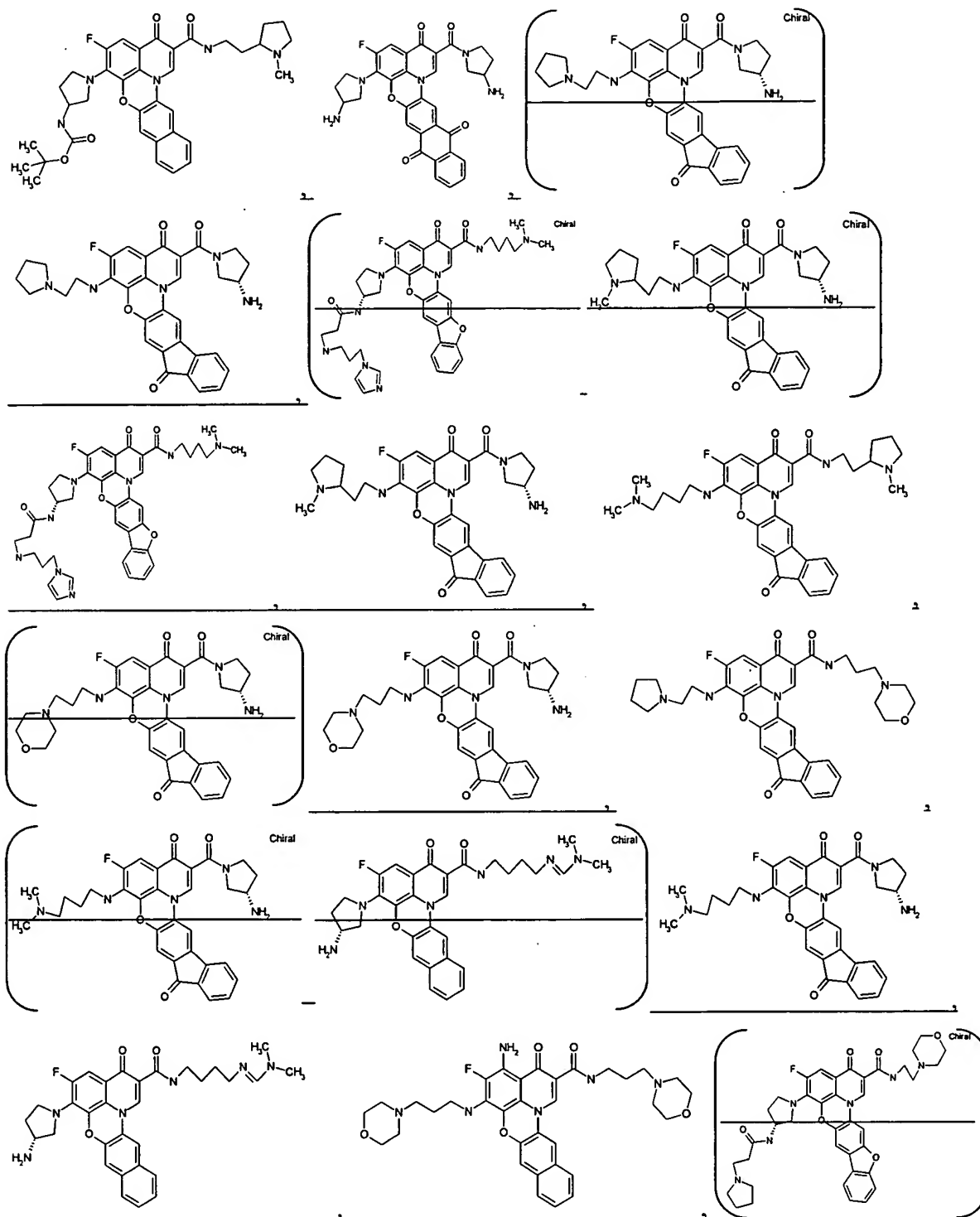


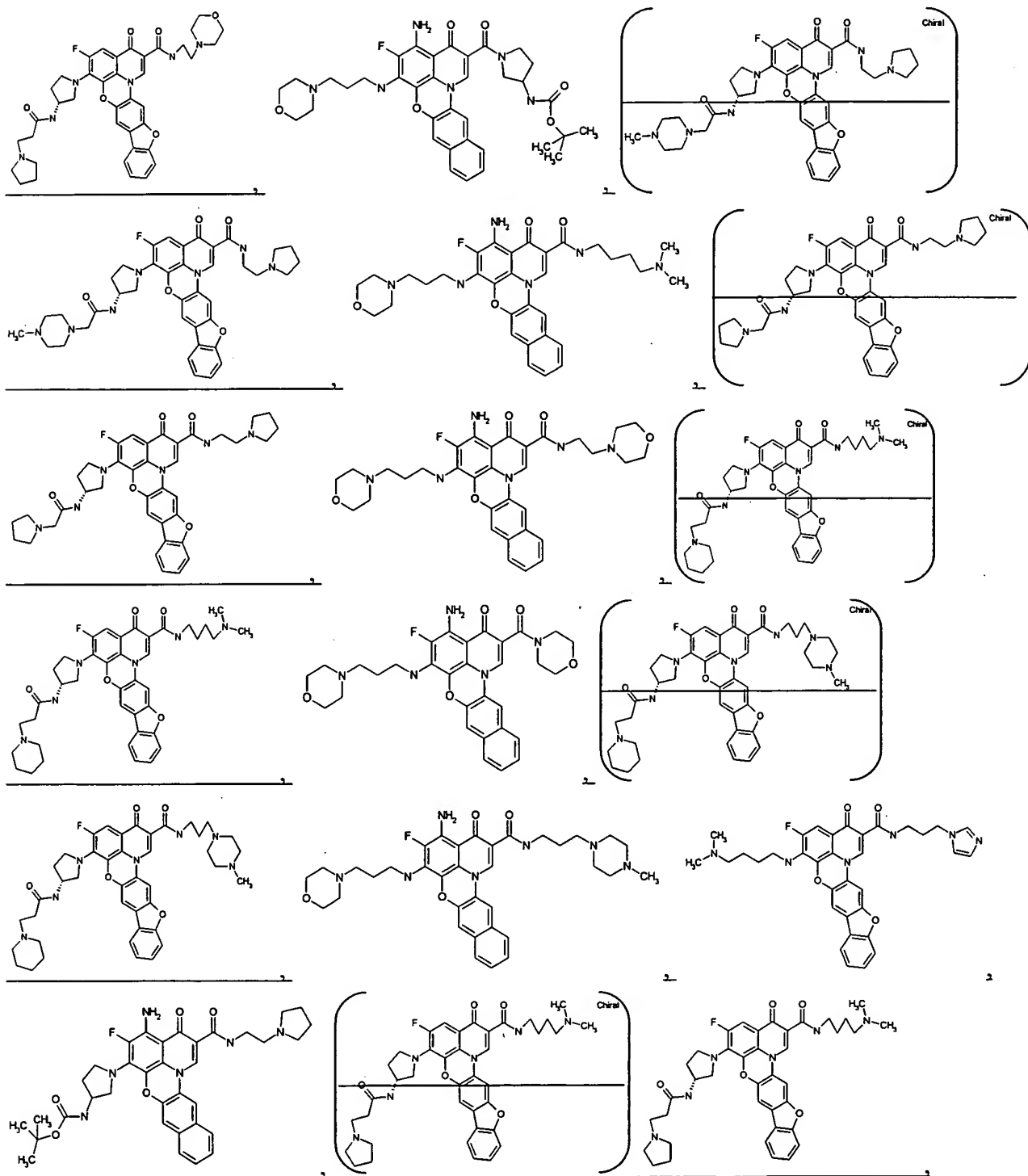


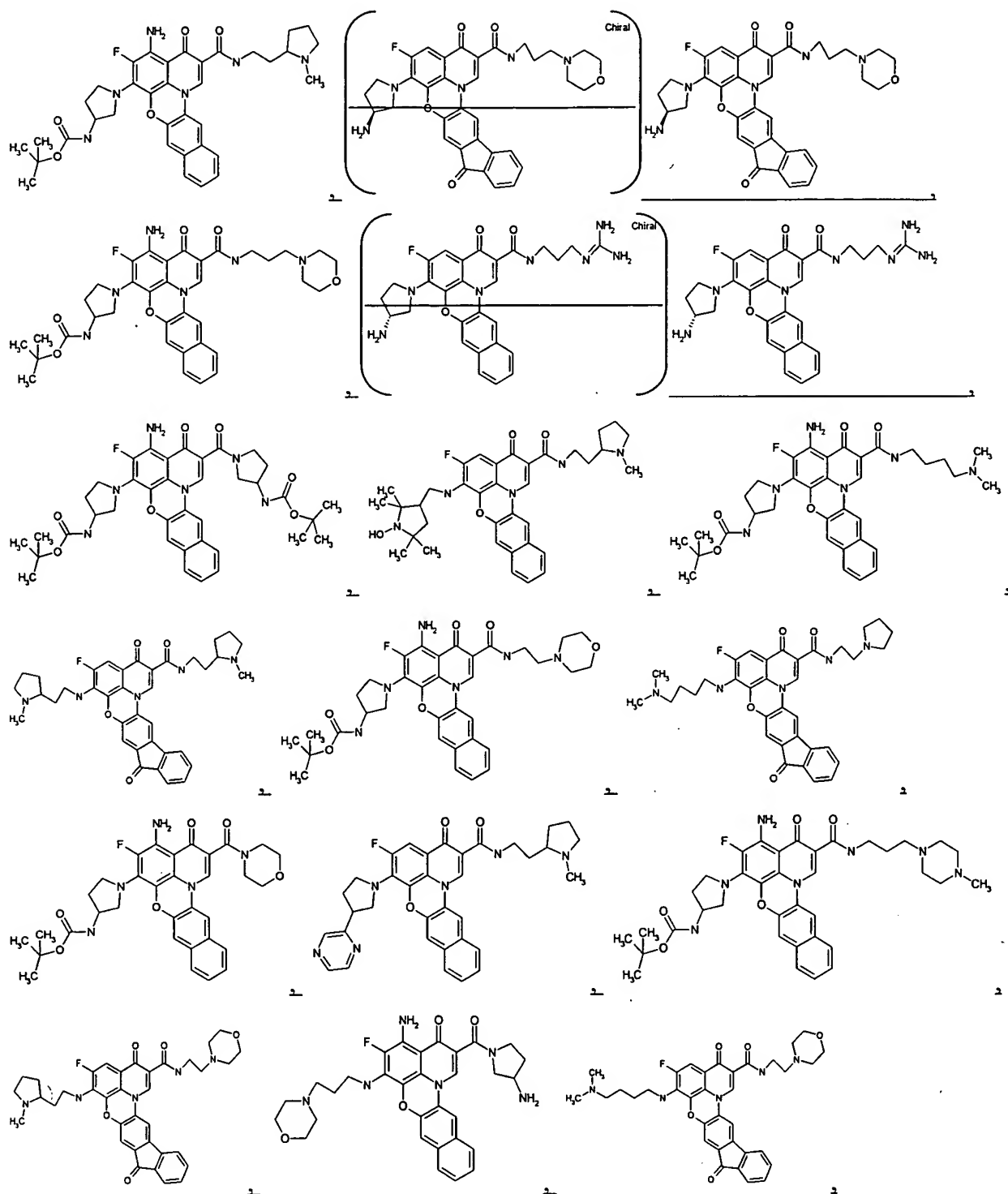


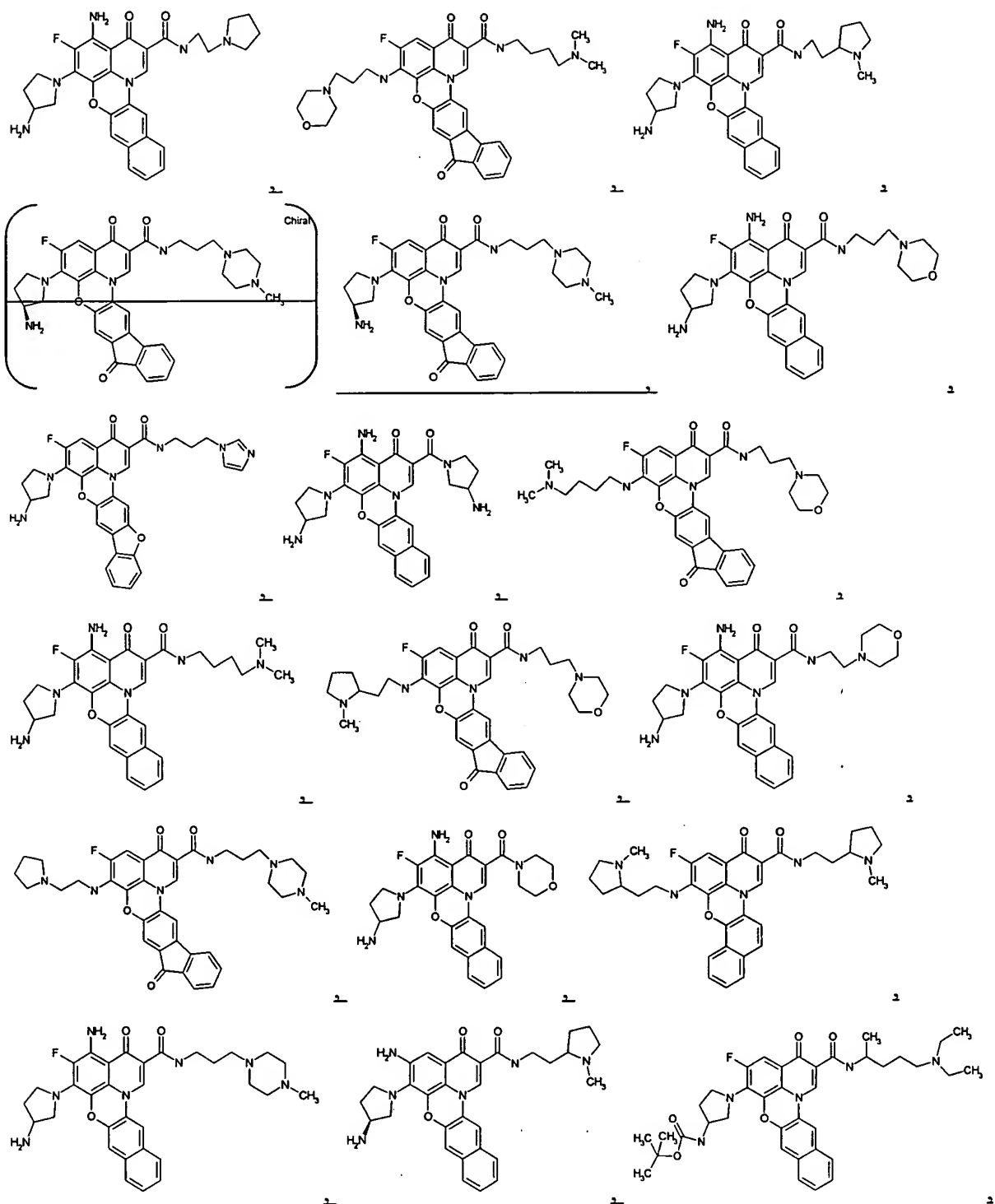


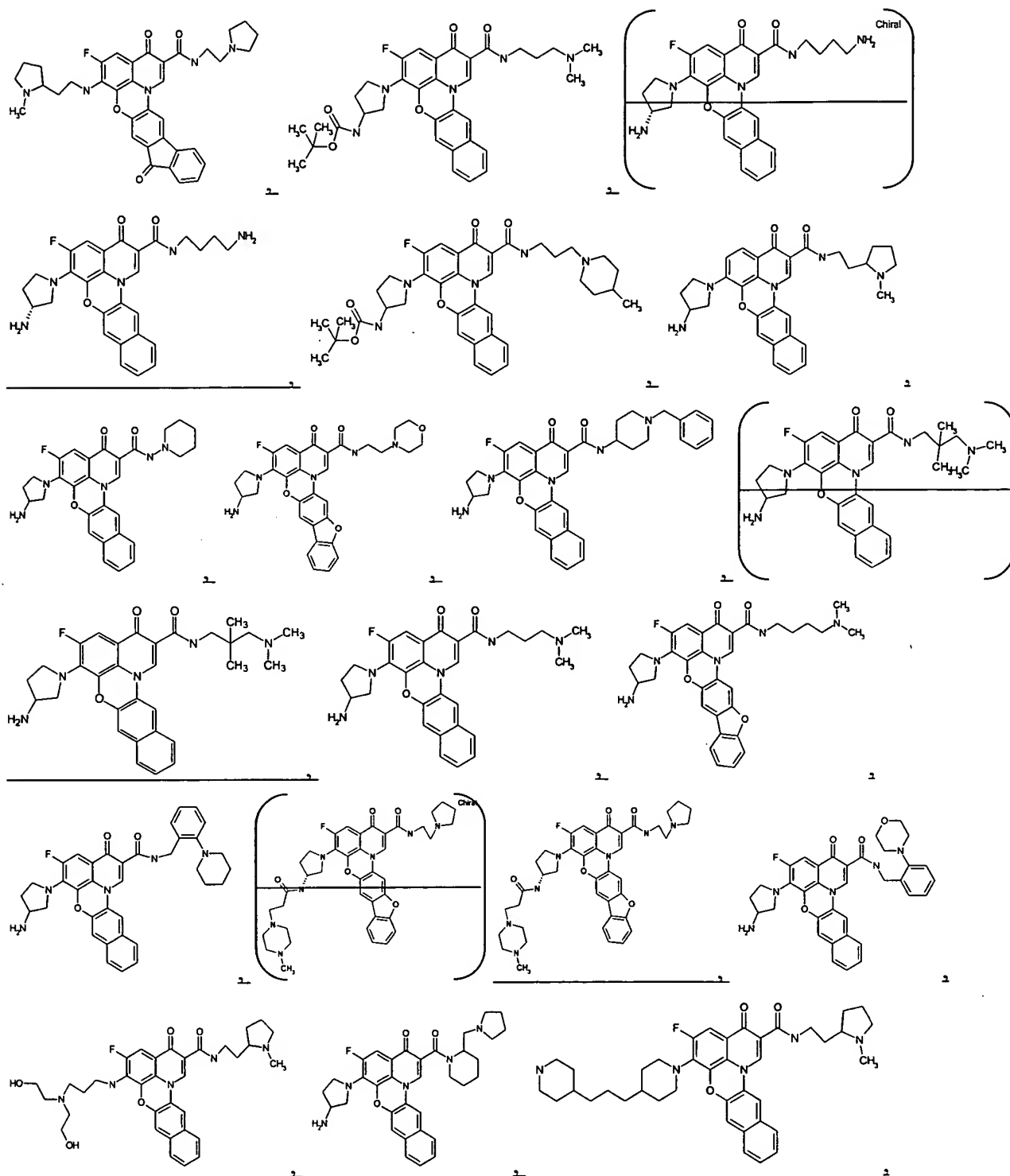


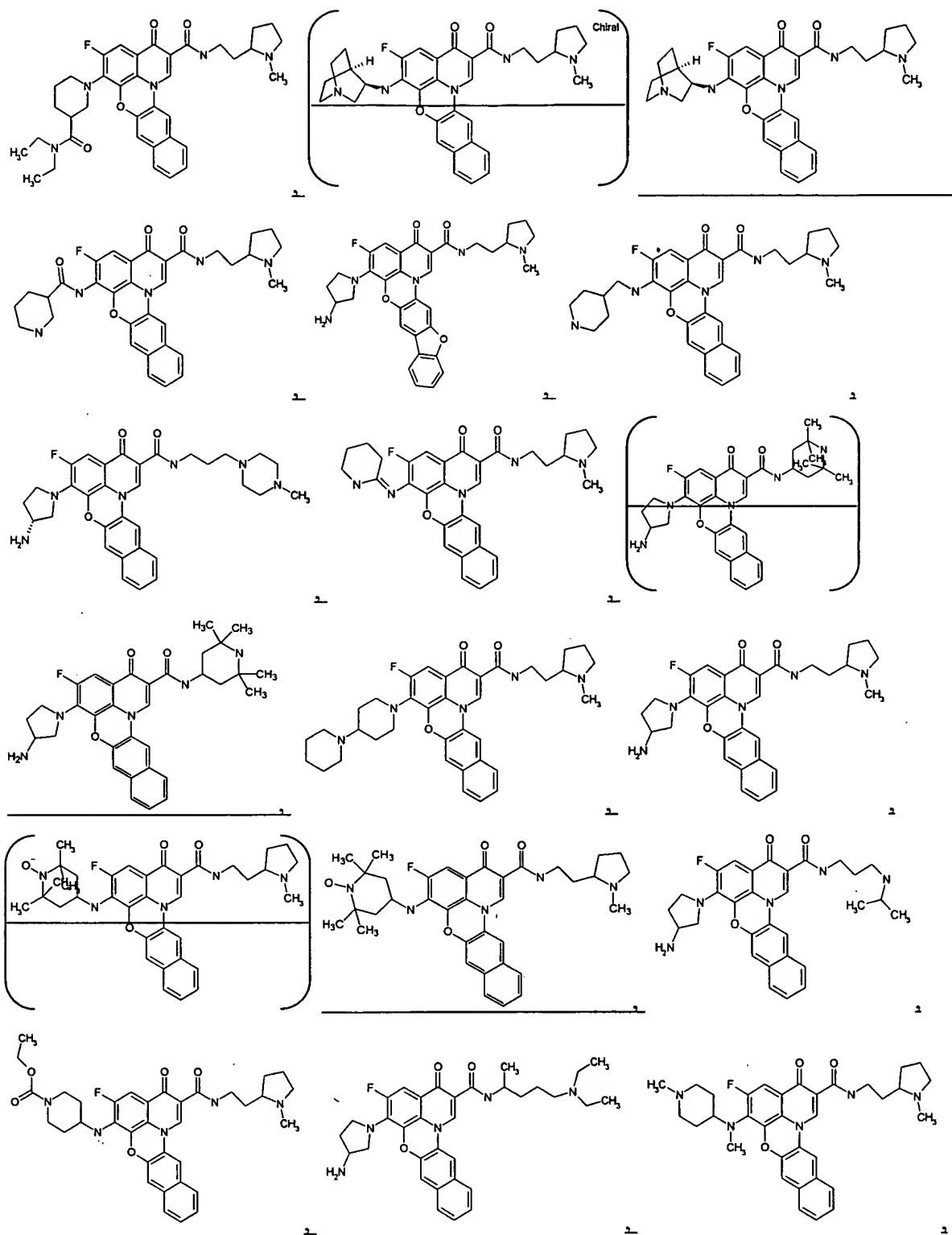


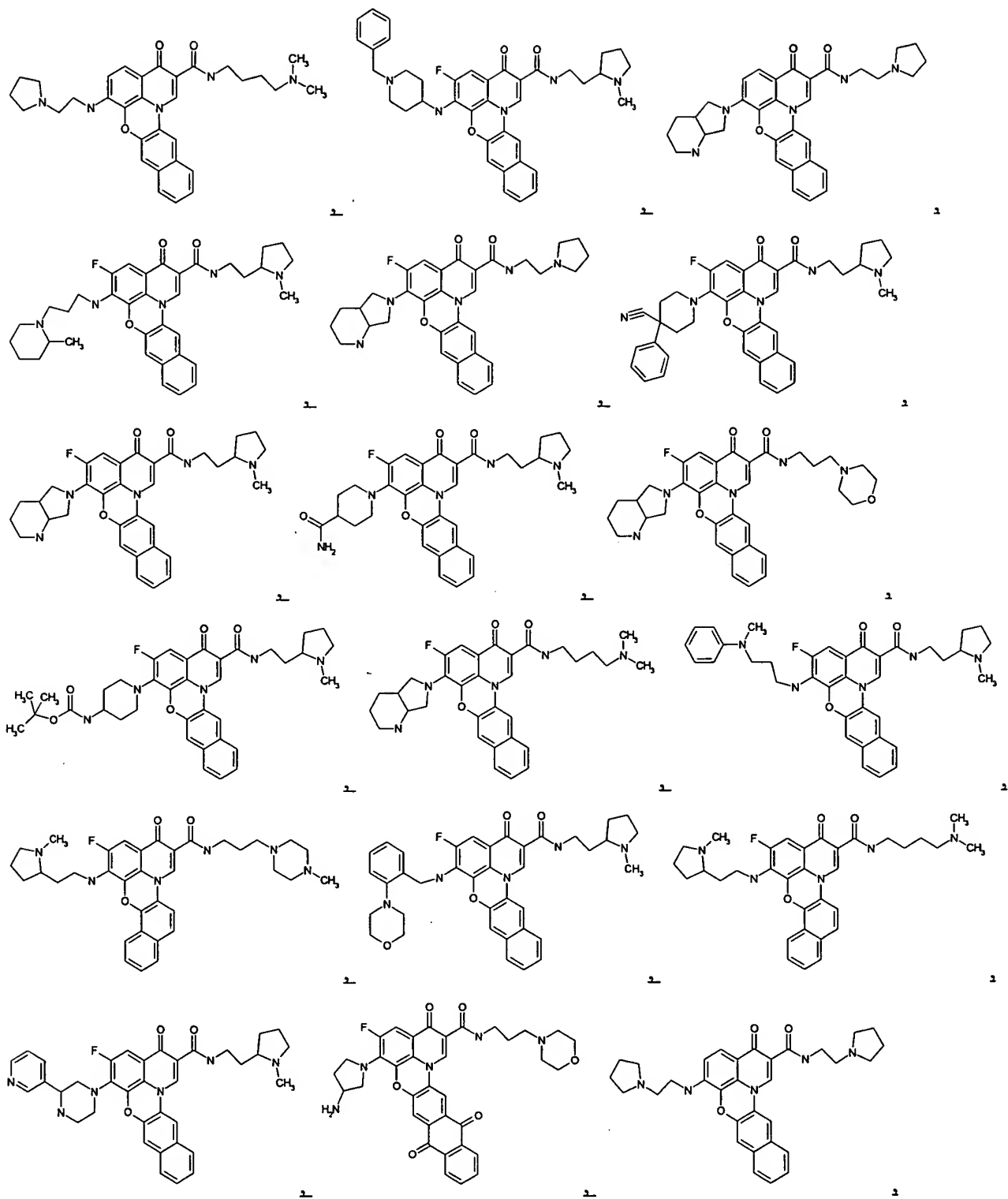


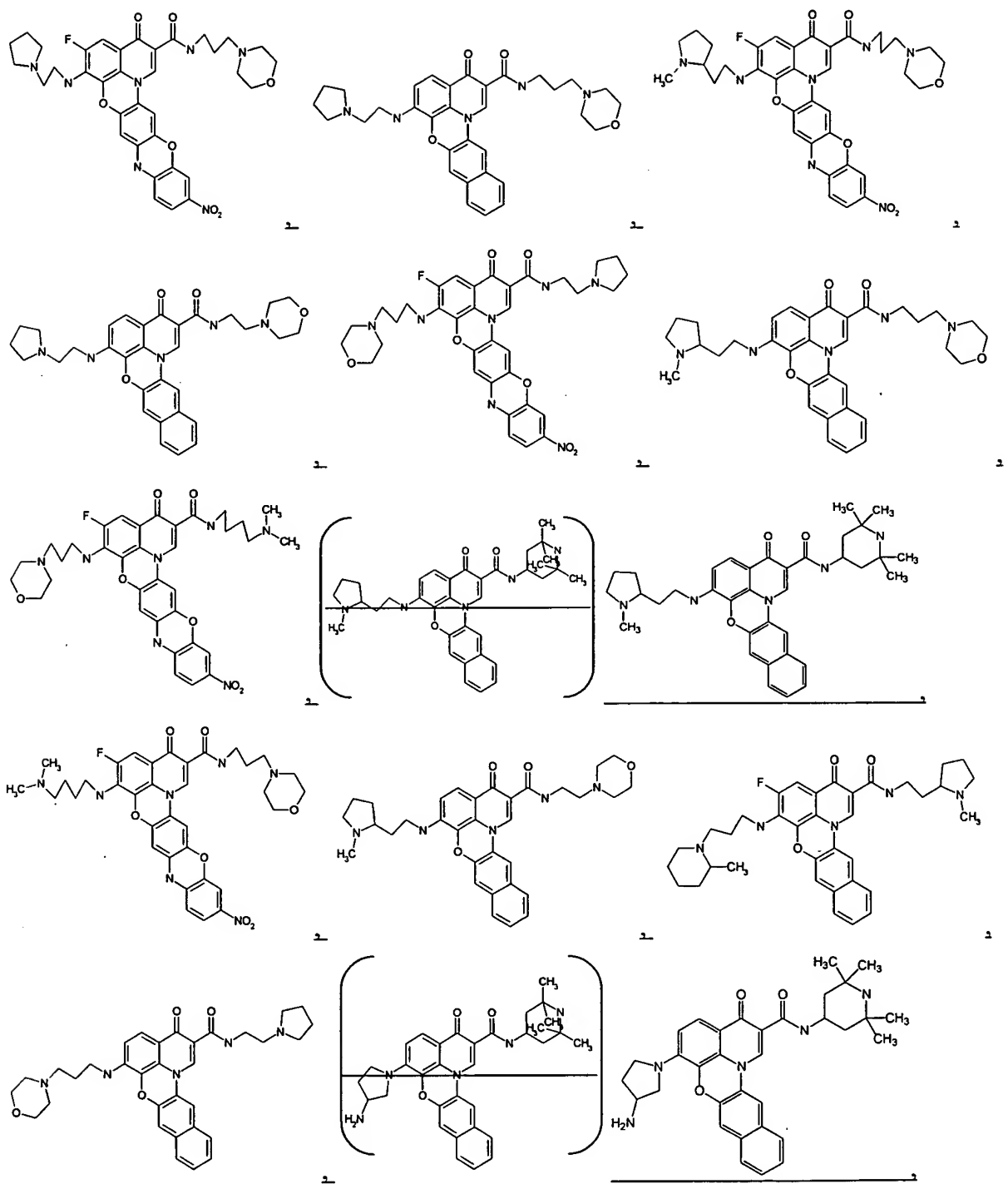


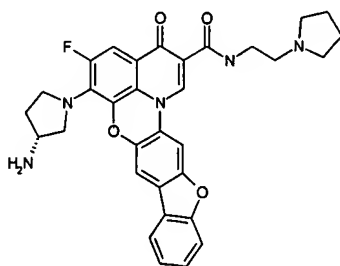
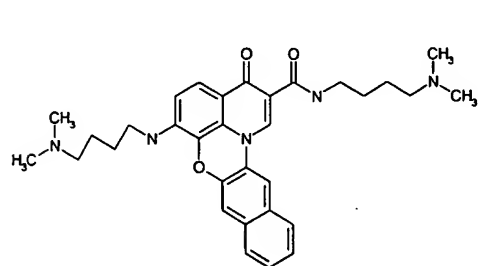
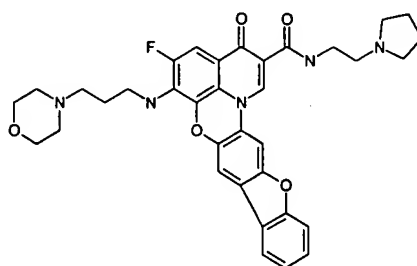
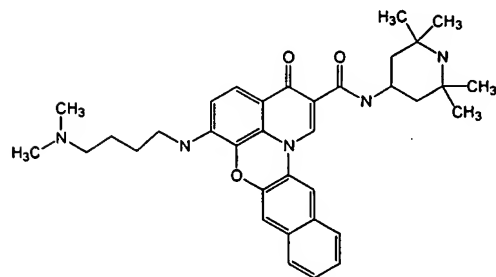
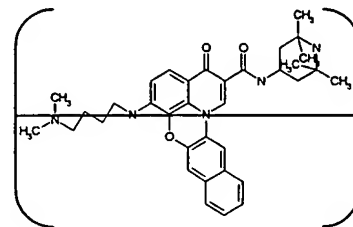
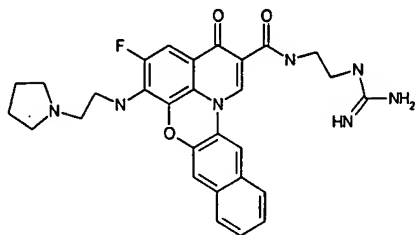
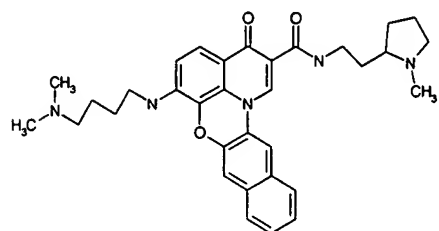
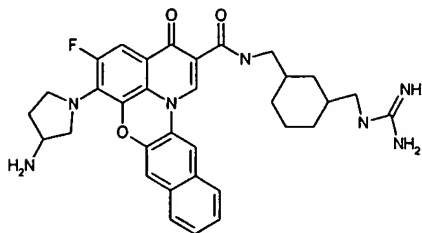
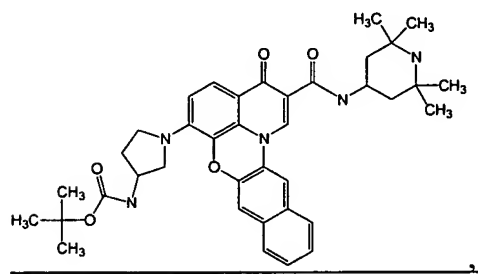
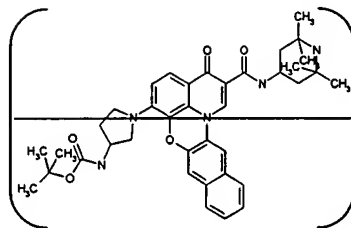
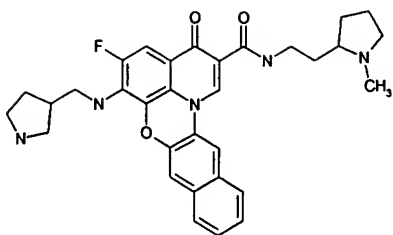
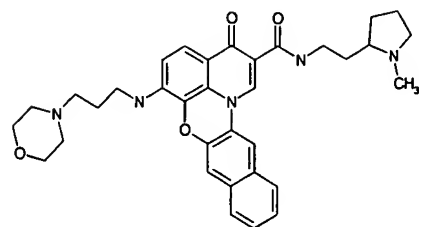


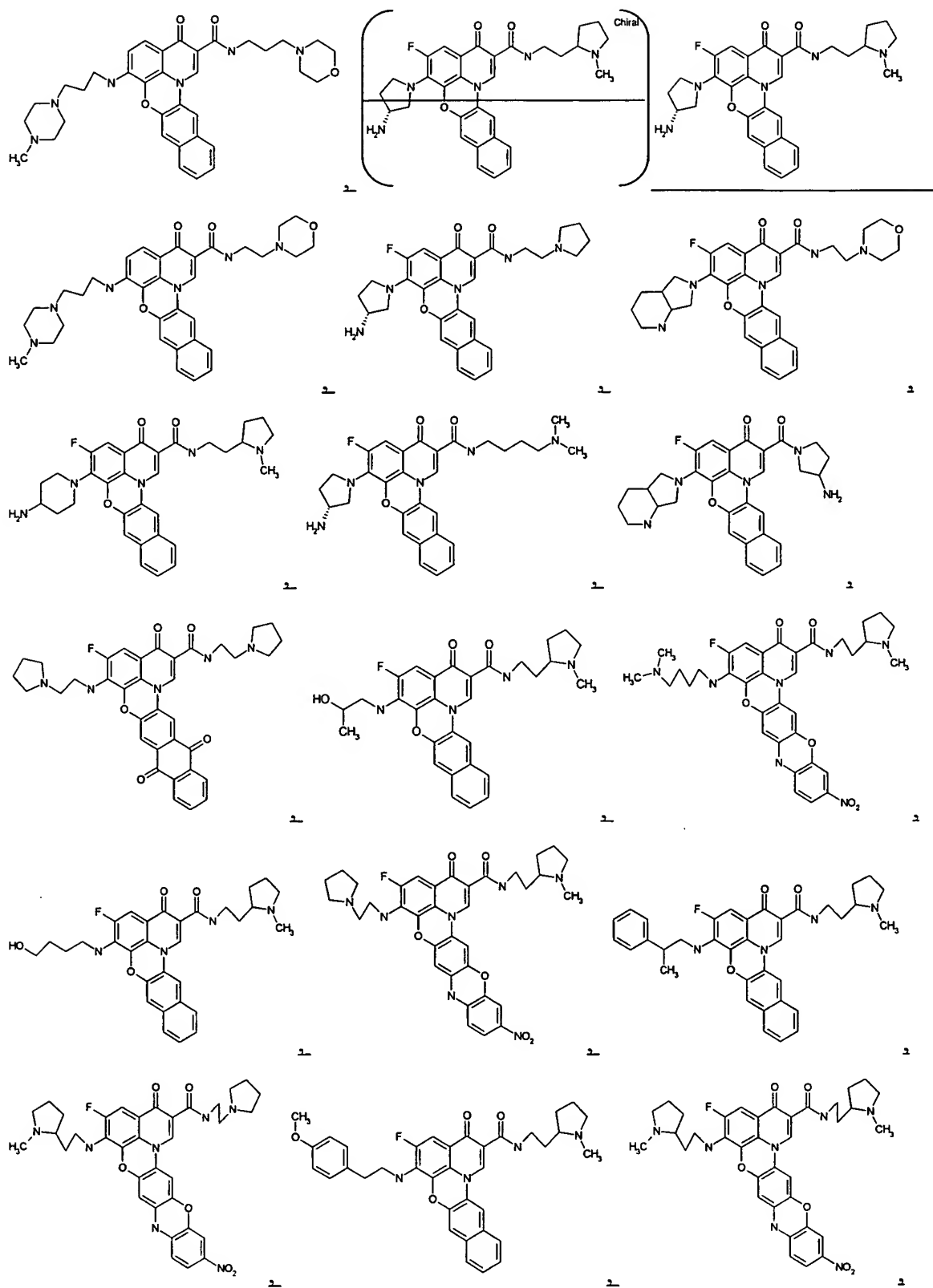


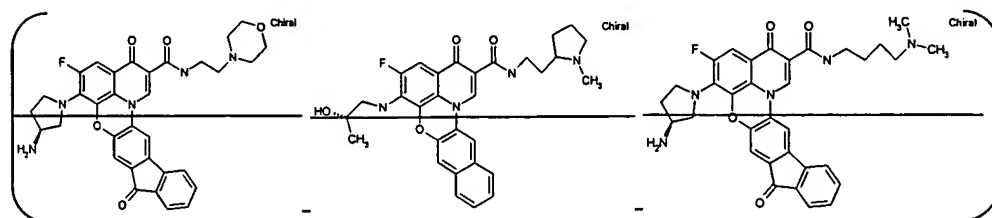
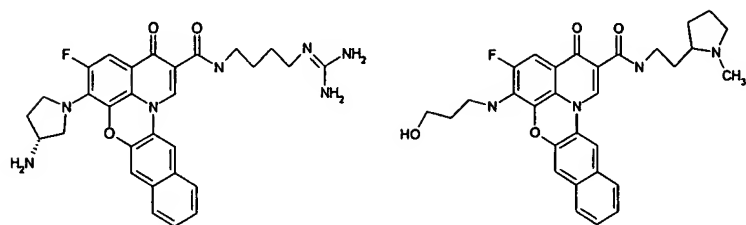
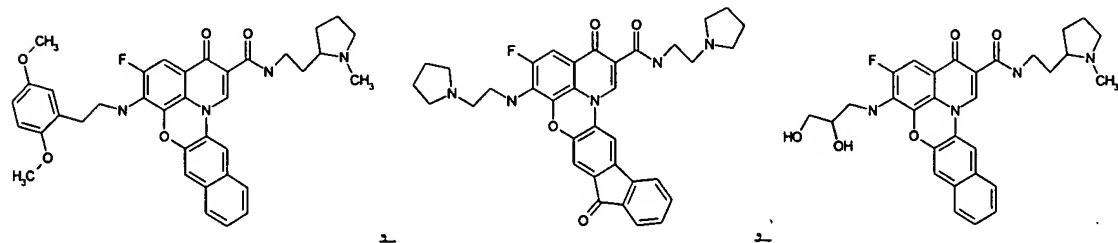
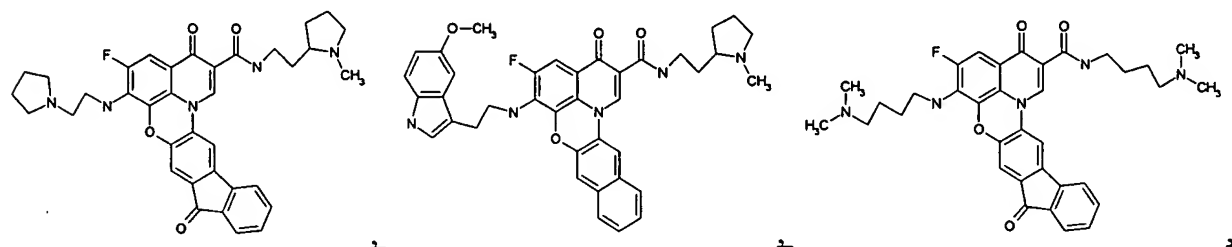
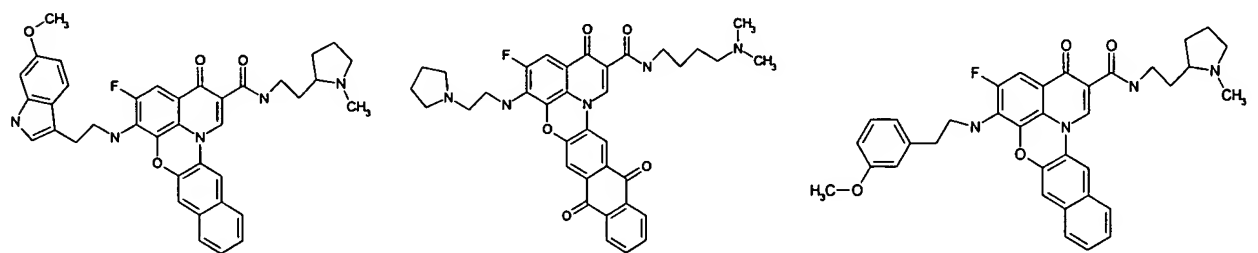
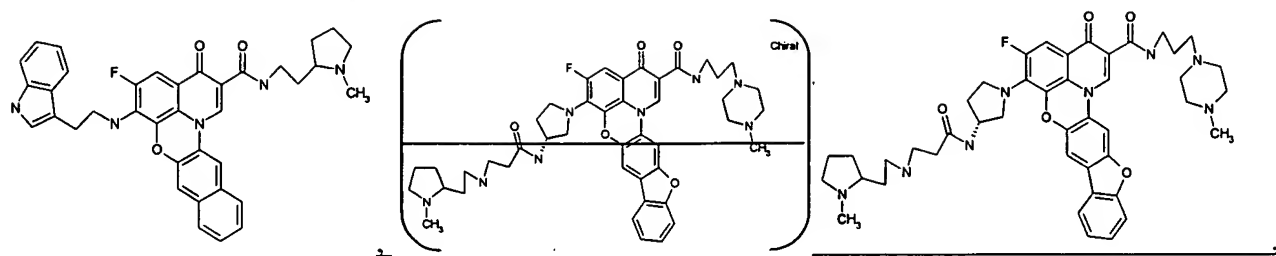


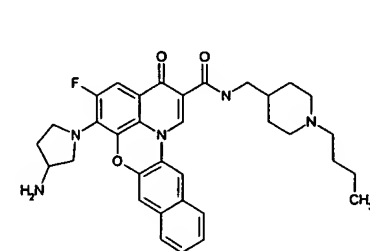
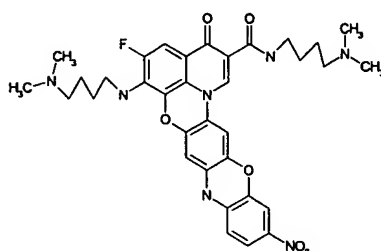
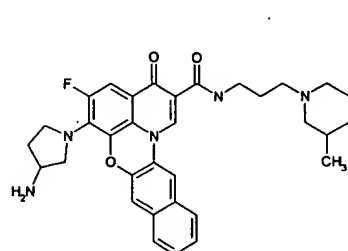
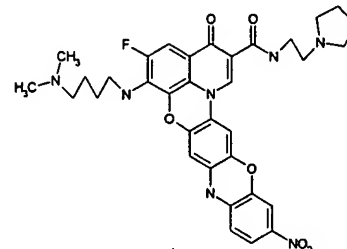
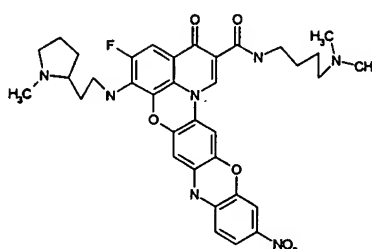
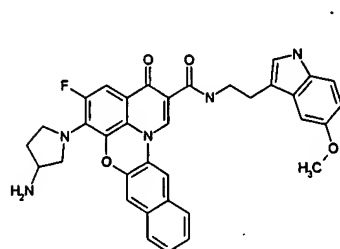
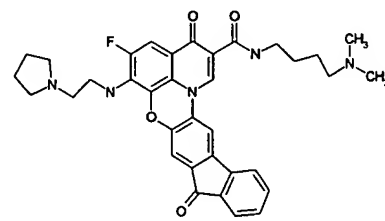
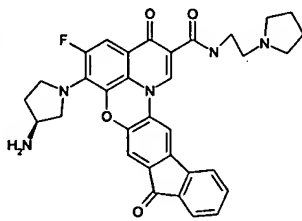
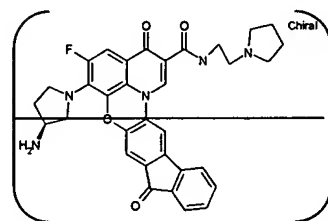
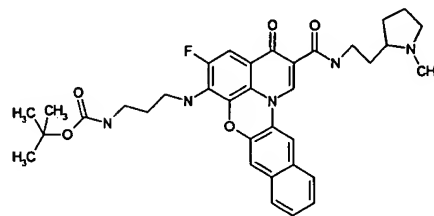
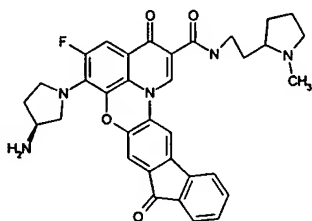
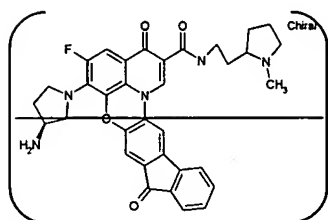
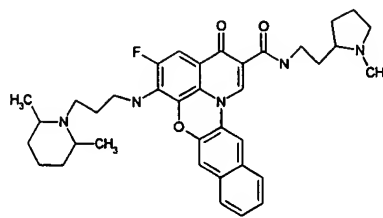
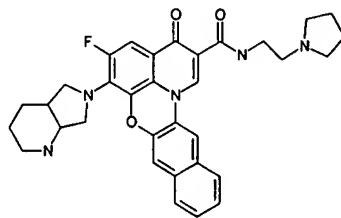
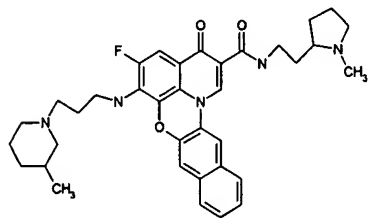
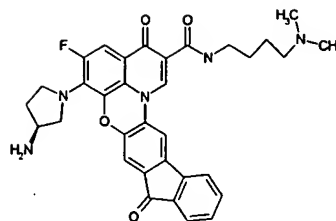
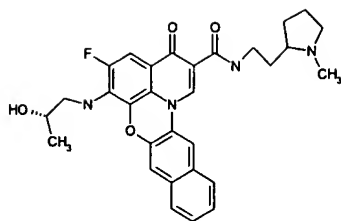
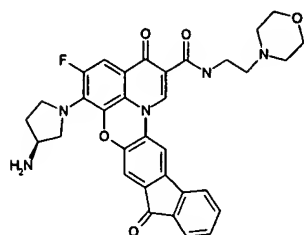


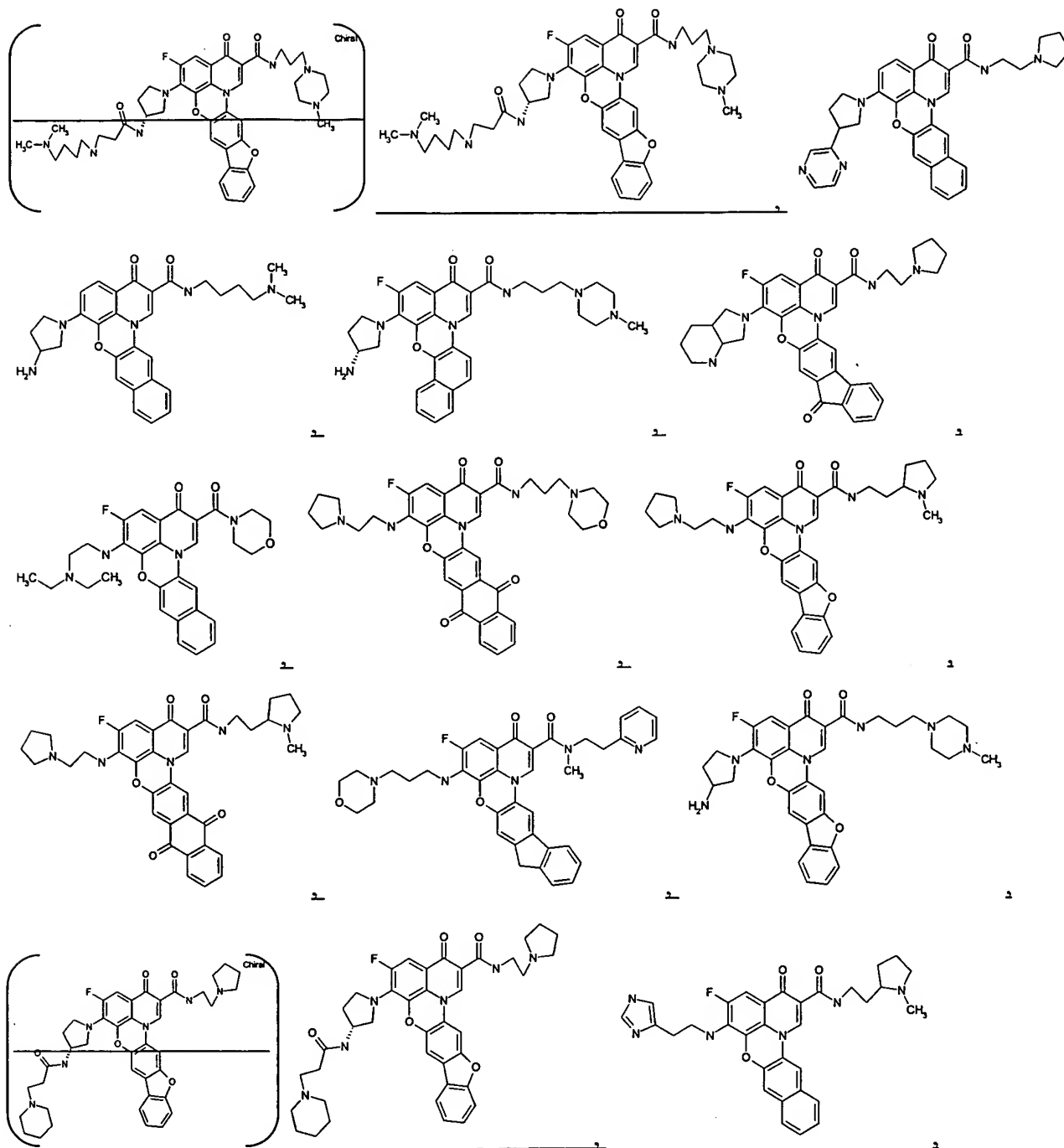


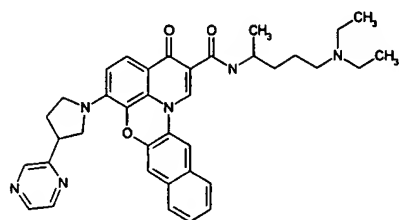




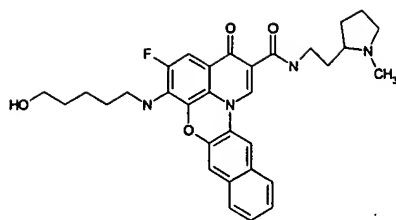




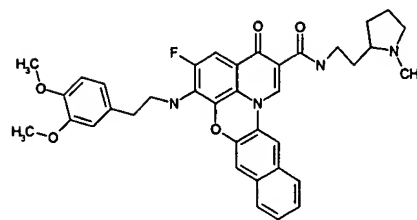




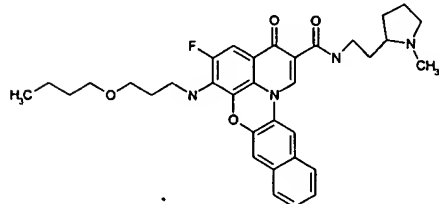
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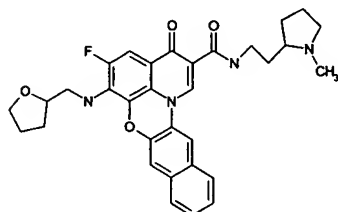
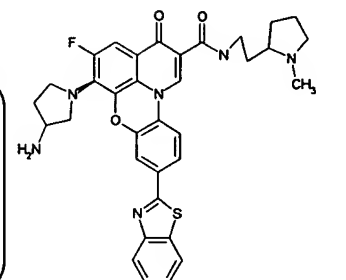
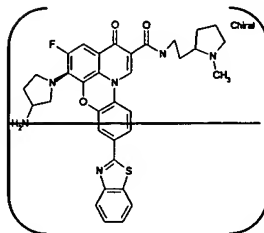
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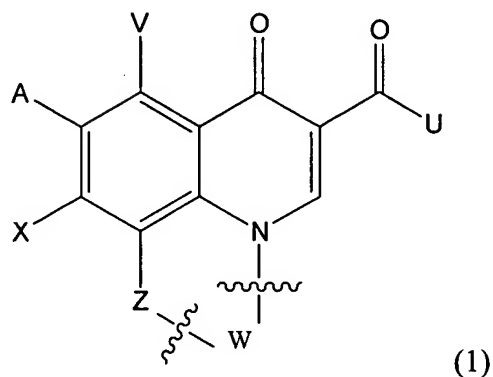


and

47. (previously presented): The compound of claim 1, wherein R is a C₁₋₁₀ alkyl substituted with a 5-14 membered heterocyclic ring.

48. (previously presented): The compound of claim 47, wherein the heterocyclic ring is selected from the group consisting of pyrrolidine, imidazole, pyridine, morpholine, thiomorpholine, piperazine, piperidine and diazepine.

49. (currently amended): A compound having formula 1,



and pharmaceutically acceptable salts, esters and prodrugs thereof;

wherein V is H, halo, or NR^1R^2 ;

A is H, fluoro, or NR^1_2 ;

Z is O;

U is $[\text{OR}]$ or NR^1R^2 ;

X is OR^2 , NR^1R^2 , halo, azido, or SR^2 ;

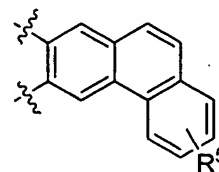
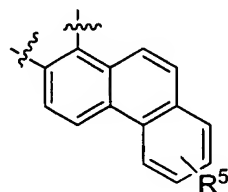
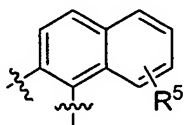
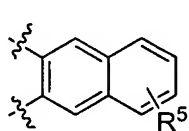
wherein R^1 and R^2 together with N in NR^1R^2 may form an optionally substituted 5-6 membered ring optionally containing one or more heteroatoms selected from N, O and S;

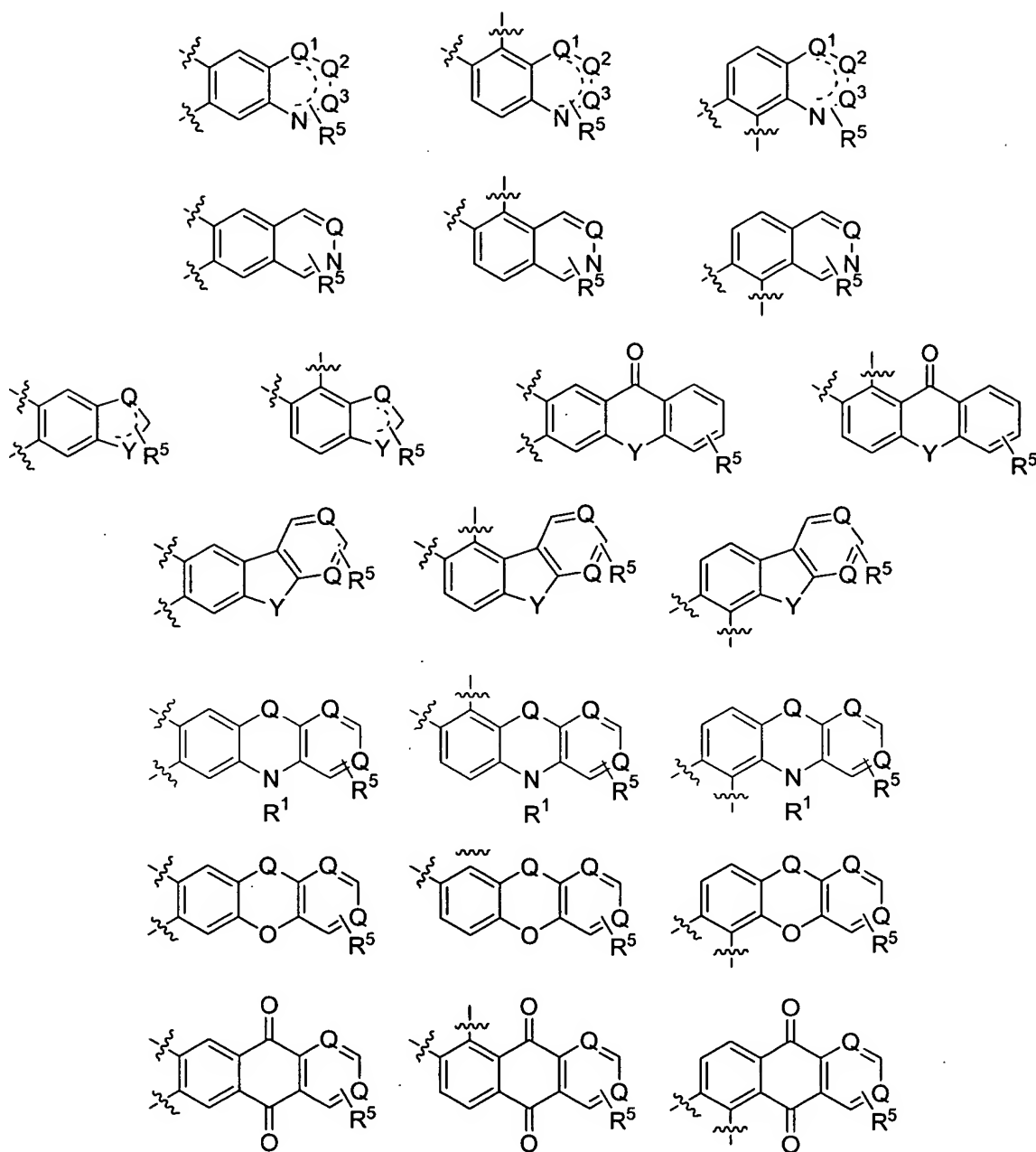
R is an optionally substituted heterocyclic ring, aryl or heteroaryl; a C_{1-10} alkyl substituted with a carbocyclic or heterocyclic ring, and optionally containing one or more non-adjacent heteroatoms selected from N, O, and S; or an optionally substituted C_{2-10} alkenyl;

R^1 is H or a C_{1-6} alkyl;

R^2 is H or a C_{1-10} alkyl or C_{2-10} alkenyl optionally containing one or more non-adjacent heteroatoms selected from N, O, and S, and optionally substituted with a carbocyclic or heterocyclic ring; or R^2 is an optionally substituted heterocyclic ring, aryl or heteroaryl;

W is selected from the group consisting of





wherein Q , Q^1 , Q^2 , and Q^3 are independently CH or N;

Y is independently O, CH, C=O or NR^1 ;

and R^5 is a substituent at any position on the fused ring; and is H, OR^2 , C_{1-6} alkyl, C_{2-6} alkenyl, each optionally substituted by halo, or C=O; or two adjacent R^5 is linked to obtain a 5-6 membered substituted or unsubstituted carbocyclic or heterocyclic ring, optionally fused to an additional substituted or unsubstituted carbocyclic or heterocyclic ring;

wherein each optionally substituted moiety is substituted with one or more halo, OR², NR¹R², carbamate, C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, each optionally substituted by halo, C=O, aryl or one or more heteroatoms selected from N, O and S; or is substituted with an aryl, a carbocyclic or a heterocyclic ring.

50. (previously presented): The compound of claim 49, wherein A and X are independently halo.
51. (previously presented): The compound of claim 49, wherein said halo is fluoro.
52. (previously presented): The compound of claim 49, where V is H.
53. (previously presented): The compound of claim 49, wherein U and X are independently NR¹R².
54. (previously presented): The compound of claim 53, wherein R¹ is H and R² is a C₁₋₁₀ alkyl optionally containing N, O or S, and optionally substituted with a C₃₋₆ cycloalkyl, aryl or a 5-14 membered heterocyclic ring containing one or more N, O or S.
55. (previously presented): The compound of claim 54, wherein said 5-14 membered heterocyclic ring is selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-*b*]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H- β -carboline.

56. (previously presented): The compound of claim 54, wherein R^1 is H and R^2 is an aryl or a 5-14 membered heterocyclic ring containing one or more N, O or S, each optionally substituted with an amino or another heterocyclic ring.

57. (previously presented): The compound of claim 56, wherein said 5-14 membered heterocyclic ring is selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-b]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H- β -carboline.

58. (previously presented): The compound of claim 53, wherein R^1 and R^2 together with N in NR^1R^2 form an optionally substituted 5-6 membered ring containing one or more N, O or S.

59. (previously presented): The compound of claim 58, where NR^1R^2 is pyrrolidine, imidazole, pyridine, morpholine, thiomorpholine, piperazine, piperidine or diazepine.

60. (previously presented): The compound of claim 49, wherein X is NR^1R^2 , and R^1 and R^2 together with N form a substituted 5-6 membered ring containing one or more N, O or S.

61. (previously presented): The compound of claim 60, wherein X is optionally substituted with amino, carbamate, a C_{1-10} alkyl containing one or more non-adjacent N, O or S, and optionally substituted with a heterocyclic ring; aryl or a saturated or unsaturated heterocyclic ring, each of which is optionally substituted.

62. (previously presented): The compound of claim 61, wherein X is substituted with a heterocyclic ring selected from the group consisting of tetrahydrofuran, 1,3-dioxolane,

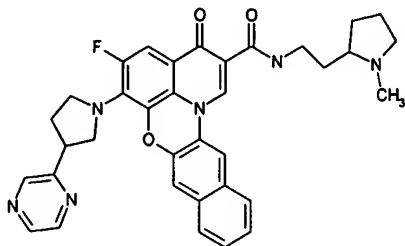
2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-*b*]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H- β -carboline.

63. (previously presented): The compound of claim 60, wherein X is morpholine, thiomorpholine, imidazole, pyrrolidine, piperazine, pyridine or piperidine.

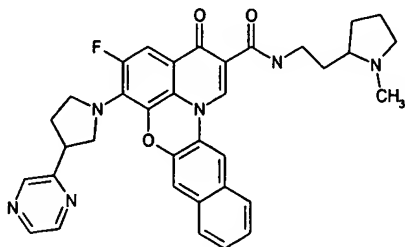
64. (previously presented): The compound of claim 63, wherein X is pyrrolidine.

65. (previously presented): A pharmaceutical composition comprising the compound of claim 49 and a pharmaceutically acceptable excipient.

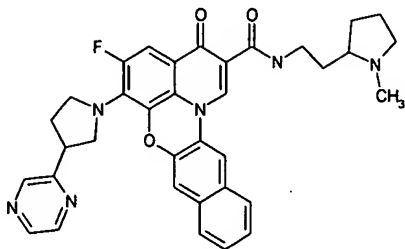
66. (new): The compound of claim 1, wherein said compound is



67. (new): The pharmaceutical composition of claim 28, wherein said compound is



68. (new): The compound of claim 49, wherein said compound is



69. (new): The pharmaceutical composition of claim 68, wherein said compound is

